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ABSTRACT

This student worktext is designed for use by those participating in an advanced child care administration course teaching microcomputer utilization for child care administrators. Addressed in the individual units of the course are the following topics: the role of microcomputers in administration of child care programs, development of microcomputer literacy, use of word processing by child care administrators, file management for child care administrators, use of electronic spreadsheets for completion of child care administration tasks, and development of accounting skills. Each unit contains some or all of the following: a statement of purpose, unit objectives, one or more learning experiences, suggestions for further reading, and handouts (exercises and sample forms). A list of references concludes the worktext. (MN)

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TABLE OF CONTENTS

CHAPTER I INTRODUCTION TO MICROCOMPUTERS FOR CHILD CARE ADMINISTRATORS

Purpose and Objectives....................................1
Technology and the Information Explosion..................3
Problems, Data, and Time Management in Child Care Administration...................................13
Analyzing the Microcomputer for a Child Care Business..19

CHAPTER II DEVELOPING MICROCOMPUTER LITERACY

Purpose and Objectives....................................1
Introduction..2
Pretest...3
A Short, Short History of the Computer....................8
How a Microcomputer Works.................................13
Getting Started with the Microcomputer....................27

CHAPTER III WORD PROCESSING FOR CHILD CARE ADMINISTRATORS

Introduction, Purpose and Objectives......................1
Pretest...3
Introduction to Word Processing...........................5
Word Processing Applications in the Child Care Situation...8
Analyzing Word Processing Needs in the Child Care Setting...9
Getting Ready to Use Word Processing......................13
Using the Word Processing Program.........................16
Keying in a Letter Using Word Processing..................19
Editing a Letter..25
Using Block Action..28
Editing and Preparing Documents...........................32
Review and Introduction to Advanced Word Processing......37
Using the Proofread Program...............................41
Advanced Word Processing: Using Special Commands........45
Computerizing Children's Records..........................51

Managing Word Processing Files on the Microcomputer......59

CHAPTER IV FILE MANAGEMENT FOR CHILD CARE ADMINISTRATORS

Introduction, Purpose and Objectives......................1

Pretest...3

An Introduction to File Management on the Microcomputer...6

Application of File Management to the Child Care Situation...9

Using the File Management Program........................11

Create a Data Base of Children and Run Reports...........13

Create a Data Base of Staff and Run Reports..............15

Merge File Management and Word Processing Documents......17

CHAPTER V USING THE ELECTRONIC SPREADSHEET FOR CHILD CARE ADMINISTRATION TASKS

Purpose and Objectives 1

Pretest...3

Introduction to the Electronic Spreadsheet................5

The Electronic Spreadsheet: How it Works.................9

Entering Data on the Electronic Spreadsheet..............17

Adjusting Column Widths..................................32

Understanding the Storage Command........................39

Printing from the Electronic Spreadsheet.................47

Menu Planning on the Electronic Spreadsheet..............51

CHAPTER VI ACCOUNTING

Introduction..1

Accountancy Software......................................2

Pretest...5

The General Ledger..8

The Accounts Receivable Program..........................24

The Accounts Payable Program.............................41

Summary..55

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CHAPTER I

STUDENT'S RESOURCE GUIDE

AN INTRODUCTION TO MICROCOMPUTERS FOR CHILD CARE ADMINISTRATORS

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TABLE OF CONTENTS

Chapter I. - An Introduction to Microcomputers for Child Care Administrators

Student's Resource Guide

Purpose and Objectives....................................Stu-I- 1

1. Technology and the Information Explosion................Stu-I- 3

2. Problems, Data, and Time Management in Child Care Administration................................Stu-I-13

3. Analyzing the Microcomputer for a Child Care Business....Stu-I-19

Chapter I

****

An Introduction to Microcomputers

Purpose:

The purpose of this chapter is to assist the student in understanding some basic information and concepts about micrcomputers, particularly as they relate to the small business operations of a child care facility.

Objectives:

After completion of this chapter, it is expected that the student will be able to:

1. Describe electronic technological developments as an increasingly complex phenomenon related to rapid information processing and the need to perform routine tasks quickly and reliably.
2. Relate the administrative tasks of a child care facility to a time-management plan.
3. Demonstrate an understanding of the current impact computers have already had on our society.
4. Deal with any problems in cyberphobia which prevent use of a microcomputer.
5. Define what a computer is and what basically a computer does.

6. Utilize the basic decision-making process necessary in selection of appropriate software and hardware for one's own small business operation.

Learning Experience 1

Technology and The Information Explosion

****

The student will:

1. Read this learning experience in order to develop some knowledge in understanding electronic technology as an increasingly complex phenomenon related to rapid information processing and the need to perform routine tasks quickly and reliably.
2. Complete the assignments as specified.

****

Introduction

Along with the current popularity of the "personal computer" has come a great many books and magazines designed to enlighten one in the seemingly mysterious ways of the "Computer Age." Many authors talk about a computer revolution. Their writings tend to imply, with various degrees of foreboding, that to be left on the sidelines of this revolution is to be condemned forever to a level of computer literacy akin to watching preschool children score millions of points against invaders from the planet Mongo on the new computerized arcade games.

One need not fear any impending or ongoing computer revolution. Computers have become quite "user friendly." In the beginning, of course, one had to have specialized knowledge of computer languages.

Now, however, the people who know how to program computers have done all that work for the "user." Hence, a "user friendly" computer!

Living with Electronic Gadgets

The computer is actually a sophisticated late entry of the Machine Age. For generations now, the civilized population has been able to adjust quite successfully to the new machines our technology has produced for us--typewriters, copy machines, automobiles, projectors, electric lights, automatically opening doors, to name a few.

Most of the American population has become quite used to the rapid changes that technological advances have provided for our culture. Remember the years BTV--that is, Before Television. It took television as an entertainment form less than a decade to become a popular threat to the movie industry. In 1946 there were only 10,000 home T.V. sets; by 1951, there were 12,000,000 such sets. That is an average of 36,000,000 people staying home to watch "Name That Tune" rather than go to the local movie theatre. Television changed the lifestyle of the average American. For the final episode of a popular night-time soap opera, Americans stopped parties in progress so that the guests would not miss out on the shenanigans of their favorite villian or heroine.

Television, itself, has changed considerable in the last decade. With the coming of cable television, one can now watch twenty-four hour news and weather reports, shop at home, or participate in the electronic classroom.

What is it that electronic machines do? Why do we need them? Inventors developed machines-- electronic, gas, electric--in order to save time and human labor. A machine is merely an instrument designed to transmit or modify the application of power, force, or motion (Webster's' Seventh New Collegiate Dictionary,1966). Look at radio.

The radio is a machine that gathers this unique form of sound and puts it back into a form which the human ear can gather and send to the brain. In this way, the radio (and indeed, the whole broadcasting network) becomes nothing more than a mechanical extension of the human ear.

A machine, then, is actually an extension of a human sense mechanism or physical strength or skill. What happens in today's world if the President of the United States wishes to address the American People? One need only turn on the television set at the proper time to receive the President's message and visual likeness at the very time the address is being given. A generation ago, one could have heard the President on the radio; before that, the text of the President's speech would have been telegraphed across the country to appear in print in the daily newspaper only hours after the speech was given. Poor President Washington! His speeches had to be printed on a press using human muscle power, placed in a leather pouch and carried by horseback throughout the land. What a considerable change, as modern Americans see and hear the President as he actually speaks. Machines, then, are truly extensions of the human sense mechanisms. One can see also in this example how our technology has also provided for more rapid information processing with devices such as the radio, television, and the typewriter.

Some machines have been labeled "labor-saving devices" because they are machines that reduce the burden of repetitive physical tasks which can only be called drudgery. And no one in this modern world wants to end up as a drudge. The completely automatic washing machine, which replaced the electric washing machine with the rollers which replaced the washtub and scrub-board, which replaced the flat stone on the river's edge--each advance was a machine requiring less human energy. Each new machine transmitted or modified power, force, or motion. Today, the dreaded task known as "doing the laundry" required few decisions involving physical labor--sorting the clothes , loading the machine, pouring in the laundry products--hardly enough exertion to tire the average five year old!

The labor saving machines of modern times are also known as "time-saving devices," for the task at hand is reliably and quickly performed. Actual time has been saved that can be used in more creative pursuits. If one has an acute case of "time-saving", then the kitchen has such gadgets as the electric can-opener, the computerized coffee-maker (that will also turn on the kitchen T.V.) and the frozen cupboard is filled with ready-to-microwave waffles, prune danishes, pre-scrambled eggs and precooked sausage patties. One has only to make the pre-squeezed orange juice using, of course, the time-saving blender with ice water obtained from the automatic ice water spigot on the door of the automatic refrigerator (that's the spigot right below the built-in electronic clock and egg-timer).

All of this is merely a reminder that if one is still breathing and reasonably sane in "modern times" then, a successful adaptation to the "Electronic Machine Age" has occurred. One need not fear any new technological advances nor remain illiterate to the purpose and workings of these new machines. This includes, of course, the microcomputer.

As a member-in-good-standing of the Electronic Machine Age, complete the following exercise. Following is a list of mechanical marvels that extend human senses or physical strength and skill. By each machine indicate what the task of the machine is and how it saves time and labor. Also, indicate the times saved by using the machine versus attempting to do the task in a more primitive manner. The first one is done for you and an example.

MACHINE	TASKS PERFORMED	EXTENSION OF	TIME SAVED
Automatic washer	Provides correct water temperature; times the wash; mixes laundry soap; removes excess water and stops automatically.	Extends human muscle power	cuts task by 3/4

Telephone

Microwave oven

Electric typewriter

Microcomputer

Electric calculator

Personal automobile

Tape recorder

MACHINE	TASKS PERFORMED	EXTENSION OF	TIME SAVED

Figure 2

The Information Explosion

Our marvelous electronic machines are not just time and energy savers that provide us with more leisure. Our culture has also experienced an information explosion. In order to make appropriate decisions, a greater quantity of information is needed than ever before. More rapid changes in information are occuring. Suppose one wishes to make budget projections as accurate as possible for the next year of operation of a child care center. Having nearly completed this task, one learns that the price of two dietary staples--dairy products and fruits-- are expected to rise by 15% each within the next two months and remain at the new price levels throughout the coming year. How will this increase affect the projected budget? How will it affect the profit margin of the center or operating costs? Is the increase enough to warrant a price increase for the service provided? Where can one make cuts in the budget to absorb the food cost increase without charging more to the clients?

Changing one set of figures requires other changes throughout the budget projections. Just as one is about to complete this heart-rending, hair-pulling task, the Federal Government announces an increase in minimum wages to be effective by the middle of next year! Now, one has to start all over again. Too much information too rapidly would seem to make the development of a planning budget a useless task. However, if the budget planning process uses a microcomputer, then these and other modifications can be made almost painlessly. With the appropriate software microcomputer programs (which, of course would be "user friendly"), this problem-solving task can easily be managed by the child care center administrator.

Problem-solving technology has gone hand-in-hand with the information explosion. Indeed, some problems in today's world cannot be solved without the use of computers. Thus, the computer is the capstone in problem-solving technology.

To understand the history of human problems and problem-solving technology it is necessary to take another detour into history. When the human family began living in large groups, there developed a division of labor. Some people continued to produce foodstuffs and were called farmers and herdsmen. Others produced necessary implements and decorative items and were called artisans and craftsmen. Still others began to consider the problems that needed to be solved for large numbers of people to live together successfully and were called politicians and bureaucrats.

One of the basic problems to be solved was to assure that the population had enough food. How much to store against famine? How much land to cultivate? How much grain to save as seed? Therefore, some wise soul began to count the amount of grain that could be produced on a certain amount of land. Numbers became important as well as standards of measurement.

This early Secretary of Agriculture needed an accurate and quick way to count so that he could relate population growth to quantities of grain needed. Thus, some mechanical form of calculation beyond finger counting and piles of stones was needed. Besides, it was rather difficult to keep transporting the large piles of stones from the fields back to his office for calculations. So he invented the abacus, a mechanical "number cruncher." With the abacus, a person can take a great many numbers and perform complex calculations with them. (This is about all that the computer does as well--it is, first of all, a number cruncher, but the computer does this task at unbelievable speeds.)

Today, the U.S. Secretary of Agriculture could not perform his duties on a national scale without assistance from computers. He needs data projections from the National Weather Bureau, accurate accounting of how much available land will be cultivated in corn, wheat, rice, etc., as well as production cost projections, and on and on. If his projections are wrong and there is an overabundance of corn, then the price of a bushel of corn drops below what it costs the farmer to produce it. Then the government has to use tax dollars to buy up and store the extra grain and provide price supports to the farmers to not grow corn the next year!

In almost every sphere of human activity the amount of data needed to solve problems has expanded so rapidly that the human brain needs assistance to produce reliable and valid decisions. This is where the computer comes in as the capstone of the problem-solving technology. Some of today's problems cannot be solved at all without the use of computers. For example, when the American astronauts were about to land on the moon, the on-board computers handled a large quantity of information and processed it rapidly to correct the moment by moment downward movements of the landing module. Without this rapid and accurate information processing, the moon module could not have successfully landed. The problem can be stated in words very simply--put the moon module down safely on the moon's surface. But vast amounts of information had to be fed into the computer so that very little time elapsed between analysis of the data and corrections in the speed and trajectory of the vehicle. This was a task no human could perform accurately or quickly enough to assure a safe landing. Thus, the computer was a necessary problem-solving tool that made the moon landing possible.

Summary

Our technology has provided us with a great many machines with which we are able to save time and human energy. One special group of machines impact our ability to solve problems. Problem-solving in today's would is made more complex by the rapid increase in information necessary to solve problems and by the rapidity with which that information changes. The computer allows us the capacity to rapidly and reliably deal with the ever-increasing information needed to make the best possible decisions.

For Further Reading

The short bibliography printed below will extend the reader's knowledge of the topics presented in this learning experience.

Dehen, J. **The Electronic Cottage** New York: William Morrow, 1982.

Weizenbaum, J. "Once More: The Computer Revolution." In **The Computer Age: A Twenty-Year View**, ed. Dertouzos, M. and Moses, J. Cambridge, Mass.: MIT Press, 1979.

McWilliams, P. **The Personal Computer Book** Los Angeles: Prelude Press, 1983.

If you have not already noticed, the major microcomputers on the market today all have one or more magazines devoted to them and their users. With little effort, these magazines CAN be fun reading!

Learning Experience 2

Problems, Data, and Time Management in Child Care Administration

****

The student will:

1. Relate the administrative tasks of a child care facility to a time management plan.
2. Explain the value of a microcomputer for chid care center business operations.
3. Read the following material and complete the assignments.

****

The administration of a child care facility usually begins as a one-person operation with a teacher designated as assistant director to handle routine matters in the absence of the administrator. In large communities, the multi-facility child care operation has recently come into being. Whether one does or will operate a single facility or serve as a central administrator of a number of child care facilities, there are essentially three elements to be managed. In the business world these are traditionally known as time, money, and people. As an efective and efficient administrator of a child care facility, one must understand that efficient use of time--a time management plan--is essntial to effective administration. In order for a child care business to continue to exist, effective planning is necessary. From a business standpoint, planning is concerned with:

1. setting goals and objectives and
2. determining the approach by which the goals and objectives are to be accomplished.

A time management plan is one that indicates the order and frequency with which certain management tasks must be performed. The outcome of this planning process is to see that all necessary tasks are performed, particularly those which are prerequisite to more complex tasks. Without an effective time management plan two things are likely to occur:

1. tasks will take more time to complete than is actually necessary, and
2. some tasks will be poorly done or left incomplete.

The following assignment is designed to help the child care administrator develop an effective time management plan which is prerequisite to determining the need and uses for a microcomputer.

The following steps should be completed in the sequence presented:

1. Make several copies of the form which appears in Figure 4 in this chapter.
2. Label copies of the form for recording daily, weekly, monthly, quarterly and annual or yearly tasks.
3. List management activities according to frequency; for example, on the daily task sheet one might have "compile attendance reports" in the task column.
4. Provide a short explanation of how a specific task provides information needed to complete other tasks; for example, attendance data may be used to prepare customer bills.

Figure 3 presents some task examples. When this assignment is completed, be prepared to share your results with other class members. How many of the tasks listed were routine clerical ones? Did others list tasks you actually perform but failed to mention? How much of administration time is really devoted to clerical duties?

listed required routine clerical duties? How much of your time as an administrator is actually spent doing clerical tasks?

TIME - MANAGEMENT PLAN

FOR ______________________ CHILD CARE FACILITY

FREQUENCY	TASK	PROVIDES DATA FOR:	TIME REQUIRED
Daily,	1. Collect & record attendance	1. Customer billing, long-range planning	
	2. Transportation report	2. Income tax data revised transportation schedule.	
	3. Check equipment and supplies	3. Safety needs, reorder supplies	
	4. Supervise staff	4. staff training needs, promotion considerations, salary increase.	
	5. Communicate with prospective customers	5. develop waiting list, long-range expansion planning.	

Figure 3

TIME - MANAGEMENT PLAN

FOR ______________________ CHILD CARE FACILITY

FREQUENCY	TASK	PROVIDES DATA FOR:	TIME REQUIRED
Weekly, daily, monthly, quarterly yearly			

Figure 4

Now, go back over the task analysis sheets and put a check by any tasks that might be easier handled using a microcomputer. What percentage of tasks on a daily basis could be done on a computer? Weekly tasks? Monthly, quarterly, and yearly tasks?

Look over the task analysis and put an "X" by those tasks that usually do not get done fully, are usually done poorly, or do not get done at all. Usually, these tasks will be the "people interaction" kinds of tasks such as staff supervision. Too often, the child care administrator is so bogged down in paperwork that she/he cannot fully attend to tasks such as supervision and curriculum development.

Be prepared to write a short paper about the task analysis assignment and turn it in to the instructor. Include any ways that might have been discovered to better manage available time.

Learning Experience 3

Analyzing the Microcomputer for a Child Care Business

****

The student will:

1. Analyze one's own need for a microcomputer
2. Analyze the risks involved in acquiring a microcomputer
3. Compare and contrast three microcomputer hardware systems

****

Establishing a Computer Purchase Baseline

Planning is the key to a successful computer utilization. What are the problems associated with getting a computer? With using one successfully? Will the computer really save money in the long run? Will I, as a child care administrator, really be able to use a microcomputer effectively in my business? These are some of the questions that should be asked before deciding to purchase a microcomputer. It is almost impossible to attend a conference or convention of child care specialists or read a journal in the field of chid care without noting some reference to microcomputers.

There is no easy process by which one may install a microcomputer in one's business. Time and effort will be required. The question one must answer is simply this: Is the child care administrator and other staff willing to spend the time and effort to install a microcomputer and to change the way routine tasks are performed?

One question often asked by small business owners is, "Isn't the computer too complex for my business? Recall the first learning experience in this chapter. Obviously, all of us can use a television set or a microwave oven. Few of us, however, know how these electronic gadgets work. It is not necessary to know how a television works to get use out of it. In many ways, this is also true of the microcomputer. The child care administrator needs to become a microcomputer "user" not a technician or programmer. Many people are reluctant to come face-to-face with a computer. "How can I touch something that can put people on the moon?" One should neither overestimate nor underestimate what a computer can do. Throughout this book, the functions and limitations of the microcomputer will be discussed in an attempt to demystify it.

One of the primary tasks of a child care administrator is to employ appropriate staff. The same questions one asks in employing a child care worker can be applied to "hiring" a microcomputer. These are:

1. Define the job the microcomputer is expected to perform
2. Get a microcomputer with the appropriate skills for the jobs to be assigned to it
3. Determine the level of performance expected of the microcomputer
4. Determine the amount to be paid for the microcomputer in relation to the desired level of performance

All businesses produce products. The ultimate product of a child care facility is quality child care. But as a business there are many other intermediate products that must be produced if quality child care is to be the ultimate product. These secondary products are the outcomes of various business systems. A system is an organized collection of people, machines, and methods needed to accomplish a specific set of objectives. Some possible business systems are: payroll, billing, purchasing, inventory control, food services, accounts receivable, taxes, general ledger and concomitant financial reports. Products of these systems might be: checks, completed forms, tax forms, menus, standard letters, financial statements, invoices and orders.

The following steps will help the child care administrator develop a baseline for determining whether a microcomputer would make a good employee:

1. Identify the major business areas

   Develop a worksheet that includes the following headings:

   * BUSINESS AREA
   * RANK
   * PRODUCT NAME
   * INDIVIDUAL RESPONSIBLE
   * DESCRIPTION OF THE PRODUCT

2. For each area, identify the administrative and productive paperwork products

   * These should be listed on the worksheet developed above.

3. List the problems encountered and the strengths of each product

   * PRODUCT PROBLEMS

     Clerical errors, mislaid/lost document, late, difficult to prepare, inadequate information, other (specify)

   * PRODUCT STRENGTH

     Individually structured, incorporates judgment, automatic, other

4. State the resources required to produce each product

   * PERSONS NEEDED

- AMOUNT OF TIME NEEDED
- COST (in terms of salary amount)
- OTHER COSTS REQUIRED
- TOTAL COST

5. Rank the products by cost of preparation within each business area
   - ADD UP THE COST TO PREPARE ALL OF THE PRODUCTS IN EACH BUSINESS AREA
   - OBTAIN A YEARLY SUM FOR PRODUCT PREPARATION
   - RANK THE BUSINESS AREAS FROM MOST COSTLY TO LEAST COSTLY.

A RULE OF THUMB FOR ACQUIRING A MICROCOMPUTER FOR A SMALL BUSINESS IS THAT IF BUSINESS PRODUCT PREPARATION COSTS ARE OVER $5,000 ANUALLY, THEN HIRE A COMPUTER!

The Computer as a Business Risk

Any new venture in the business world has some risk attached. A business risk is any condition that can cause the business to lose money or fail. Risk is a common part of everyday business life. It must be dealt with realistically if the business is to survive. The decision to acquire a computer introduces new risks and may well expand existing ones. What are some of the common risks in operating a child care facility? Failure to meet liscensing requirements, loss of clients because of changes in the neighhorhood, food poisoning, parents who fail to pay for services received--these are some of the risks in operating a child care facility. These kind of risks will exist whether one purchases a microcomputer or not. The microcomputer cannot do everything! It will not prevent childhood diseases, make the liscensing representative love the center more, force parent to pay back bills, or automatically increase cash flow.

It is important, however, when considering a major purchase such as a microcomputer to understand the new and increased risks involved. In this way, the child care administrator can be fully prepared to meet these risks. Some possible risks are:

1. **People thinking about people versus computer logic**

   When a system is automated by using a microcomputer, then there are set rules built into the computer program. For example, a microcomputer program might automatically send an overdue bill to every customer regardless of the cause. The administrator may want to give Mrs. Jones extra time to pay a bill because of unusual circumstances. Unless the microcomputer is told not to do so, it might automatically send a "pay-up-or-else" letter to Mrs. Jones!

2. **People variability versus the consistent computer**

   People have their ups and downs. Not feeling well or a cross remark from a parent can turn a competent child care administrator into an error-prone terror. But the computer has no feelings. As long as its human user has correctly loaded a program into the innards of the microcomputer, it will consistantly follow the rules of that program. If the user has entered incorrect information into the microcomputer, then the microcomputer will follow that information throughout all its transactious. Only a microcomputer could print six checks of $1,000,000.00 each for six different minimum wage employees!

3. **Paper evidence versus electronic bits and bytes**

   Any good business maintains paper files to prove tax deduc-

> tions, prove client billings, and satisfy legal requirements. But electronic evidence! What if the electricity goes off with the General Ledger in the microcomputer? Who is to say what a power surge through your Accounts Receivable could do the the decimal points? You say a city truck with an electric motor parked outside of your office last night and the magnetic field it set up erased all of your diskettes? Such a risk!

The risks in acquiring a microcomputer can be minimized if the child care administrator fully understands for what purposes and by whom the equipment will be used. Purchasing microcomputer hardware and software establishes the structure in which information can be processed. What is needed is a small business microcomputer. Some systems may be too small and some too large and costly. Here again, an appropriate problem-solving process must be used.

Comparing Microcomputer Systems

Aside from the fact that most microcomputer systems that one could select for small business use will have similar software, not all microcomputers are alike. It is necessary to compare and contrast various microcomputer systems so that an intelligent purchase is made that will perform all the tasks required in a cost-effective manner.

For a microcomputer to be truly "user friendly" it must have well-designed software. The term "software" refers to the prepared programs that one can purchase and insert into the memory of the microcomputer. Thus, it is necessary to begin an analysis of various microcomputer systems not with available hardware (the microcomputer itself, the printer, etc.) but with the software programs. Answer the questions on the following page to analyze possible software needs.

SOFTWARE NEEDS

1. Who is going to use the software?

   a. Preschool children for introduction to the computer and for developing basic concepts

   b. Afterschool children for basic computer literacy or doing homework

   c. Teachers of the child care center to develop curriculum

   d. Center Administrators

   e. Other ______________________________

2. Where is the software to be used?

   a. in the classrooms

   b. in a special laboratory/resource room

   c. in the administrative offices

3. How will the software be used?

   a. educational purposes

   b. administrative purposes

   c. supervisory purposes

4. What specifically will the software do for the center?

   a. ______________________________

   b. ______________________________

   c. ______________________________

   d. ______________________________

   e. ______________________________

   f. ______________________________

   g. ______________________________

Complete this exercise by filling out Handouts 2 through 5. Then visit three vendors of different microcomputers and write a short report summarizing the findings. Turn in the handouts and the summary to the instructor for evaluation.

HANDOUT 2

HARDWARE NEEDS

List microcomputer options and peripherals that would be necessary to complete your needs in Handout 1 and why.

OPTIONS AND PERIPHERALS DESIRED	WHY
1.	
2.	
[illegible].	
4.	
5.	
6.	
7.	
8.	

Are your hardware and software needs sufficient to warrant the expense?________

Handout 3

EVALUATING HARDWARE

BRANDNAME:	1.	2.	3.
1. Price			
2. Warranty			
3. Service			
4. Financing			
5. Newsletter			
6. Parts included in basic price			
7. Additional parts and prices			
8. Keyboard			
9. Printer			
10. Monitor			
11. Graphics			
12. Character/line			
13. Lines/frame			
14. Company Software			
15. Compatible Software			
16. Other			

RESOURCES

List resources in your own geographic area that can provide information about microcomputers and training (stores, people, etc.).

1. ______________________________
2. ______________________________
3. ______________________________
4. ______________________________
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24. ______________________________

USES OF MICROCOMPUTER FOR CHILD CARE FACILITY

Population of Uses:	Microcomputer Use:

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CHAPTER II

STUDENT'S RESOURCE GUIDE

DEVELOPING MICROCOMPUTER LITERACY

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Chapter II

Developing Microcomputer Literacy

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Purpose

The purpose of this chapter is to assist the student to develop a basic understanding of what a microcomputer is, how it works and how to get started using a microcomputer.

Objectives

After completion of this chapter, it is expected that the student will be able to:

1. Explain the basic functions of a microcomputer
2. Describe the primary units of a microcomputer and tell what each one does
3. Develop a basic vocabulary of computer terminology and be able to use it appropriately
4. Demonstrate ability to set up a microcomputer system so that it is ready to accept user generated data. (The student could skip everything except objective 4 and still be an excellant microcomputer "user.")

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Introduction

While "computer" is now a household word, there are still millions of well-educated persons for whom the entire concept is shrouded in mystery. The unfortunate analogy is that what the "magic" bones were to the witch doctor, so the computer is to the high priests and priestesses of modern technology. The computer is not a device of witchcraft. There is no reason to consider computers either magical or beyond the realm of one's understanding. Computers are explainable and understandable in everyday terms.

Since this student manual is designed to assist one to use a microcomputer, this chapter will use the word "microcomputer" throughout. The word "computer" will be used when discussing the history of these machines, as when discussing the giant computers known as mainframe computers.

There are basically two types of computers. They are analog and digital. An analog computer measures the "likeness" of a problem. It sets up a similar problem and measures the results. This type of computer is used in manufacturing plants. It obtains information or "data" from the manufacturing machines and then adjusts settings on the machinery itself. For example, large quantities of various ingredients must be correctly mixed by the Betty Crocker people to produce those cake mixes one can buy in the store. Just the right amount of flour, powdered eggs, shortening, etc. must be supplied to the mixture. The analog computer monitors this process and tells the machine when adjustments in the amounts should be made to keep the mixture uniform.

The type of computer that will be discussed in this chapter is the digital computer. Any data put into a digital computer is stored as a series of digits (ones and zeros) which is translated into electronic signals. The microcomputer is a digital computer.

What a Microcomputer is Not

First of all, the microcomputer is not a machine to replace human thinking. As a machine, the microcomputer is no smarter than an electric eggbeater. The microcomputer cannot "think" any more than an eggbeater can do so. The eggbeater cannot decide when to stop beating eggs to make a perfect meringue for a chocolate pie. The cook must do the thinking and turn off the eggbeater at the appropriate time. Left to itself, the eggbeater would only destroy the egg white as far as a good meringue is concerned. In like manner, the microcomputer cannot think. It cannot make independent judgements. The microcomputer can only do what a programmer tells it to do. If the programmer tell the microcomputer to do something wrong, then it will do that just as faithfully as if were doing the right thing. If the person entering data into the microcomputer puts in incorrect data, unless the microcomputer has been programmed to recognize the mistake, it will use the data given to it. For example, a university library in San Antonio, Texas, uses a computer program to catalogue books. But, until recently, if a particular keystroke was entered into the system, then the computer would "dump" everything that had just been entered. It was not supposed to do that. There was a "bug" or error in the program. But the computer did not know that the bug existed. It went on its merry way dumping data that its human users did not want dumped! Not until a smart, new librarian found the misinformation was the program "debugged."

In the example above, it should be noted that the misinformation was fed into the computer by human programmers. The error was one in human thinking not computer logic. In fact, the computer could not think! It could not make a decision at all. It could only follow incorrect information fed into it. The computer is only a machine, as smart as the average electric eggbeater.

A false comparison is often made between the human brain and the microcomputer. This is ridiculous! This happens only in science fiction novels and movies. Even if one wanted to imitate all the processes of the human brain, one would hardly start with the microcomputers of today. One might as well attempt to create a modern sewing machine out of needles and thimbles as to compare the microcomputer to the human brain.

Learning Experience 1

Pretest on Chapter 2

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The student will:

Answer the following questions before studying the material in this chapter. If the answer is not known, then simply write "don't know" in the space provided. Please use ink.

****

1. Write a short statement about what each of the following contributed to the development of the computer:

   a. Charles Babbage: ______________________________

   ____

   ____

   b. Herman Hollerith: ______________________________

   ____

   ____

   c. University of Pennsylvania staff: ______________________________

   ____

   ____

   d. DataPoint Corp. of San Antonio, Texas: ______________________________

   ____

   ____

2. What is a computer? ______________________________

   ____

Stu-II-5

3. The three primary operations of a microcomputer are:

4. The three primary units of a microcomputer are:

5. What are the three steps of the basic processing cycle?

6. Arrange the following terms in their hierarchial order:

Record

Bit

Field

File

Byte

7. What does 16K stand for when used to describe a microcomputer memory?

8. Differentiate between the terms ROM and RAM:

9. ______________________ is the principle computer programming language used by most microcomputers.

10. Name three means of storing data from a microcomputer:

____

____

____

Learning Experience 2

A Short, Short History of the Computer

****

After completing this learning experience, it is expected that the student will:

Be able to tell some of the history of the computer.

****

The human family early developed systems of counting. Indeed, it may have been a natural outcome of the human thinking process. With counting came the need for aids to the counting process. As mentioned in Chapter I, the earliest computation system was probably groups of pebbles. These, however, were not very portable. Later came knots on a piece of rope; still later, beads on a rod were used for counting. Examples of the abacus--those "beads on a rod"--have been found in the Tigris-Euphrates valley dating about 5000 years ago.

In the tenth century, Pope Sylvester II learned of the Arabic number system and a "calculating machine" invented by the Moors. This type of calculating system was introduced by Pope Sylvester into Western European culture.

Nothing much seems to have happened with the development of calculating machines or computers until the 1600's. Then, Oughtred of England invented the slide rule which is an analog computing device. Later, in 1642, Blaise Pascal invented the forerunner of the modern desk calculator. This device was digital. Each digit was represented by a position on a wheel. When a certain wheel moved to the zero position, the a rachet inside the machine advanced the number to the next higher order wheel. Pascal won fame, but little money from his invention. The Pascal calculator did, however, strike terror into the hearts of many learned clerks of his time. They feared unemployment.

Other moderately successful computing machines were developed in the 1700's, but it was in the 1800's that the automatic computing machine was first conceived by Charles Babbage of England. He wanted to build a computing machine that would compute logarithm tables. Babbage had heard of the automatic looms which were developed in France, so he wanted to see them. These early looms used a continuous loop of perforated paper to select the warp of the fabric being created. A box with needles was pressed against a part of the paper tape. Where there were holes on the paper, the needles would penetrate. Then corresponding threads would move. This would determine the pattern of the fabric. By the time Babbage got to France, the paper tape had been replaced by a series of punched cards like some computers of today still use.

The design of Babbage's first calculating machine was called the Difference Engine. He managed to persuade the Parliment in England to give him fifteen hundred pounds to perfect his invention. But Babbage never completed these earlier machines even though Parliment gave him more money.

Babbage did not give up. In 1835, he described to the Royal Academy of Sciences in Brussels an automatic, general purpose computer called the Analytical Machine. The structure of this machine was quite similar to modern computers, functionally speaking. It had a memory which stored numbers. It had an arithmetic unit; input of data and program information was from punched cards. Output was by printing or punched cards. This machine could add, subtract, multiply, and divide.

In 1842, Ada Agusta, Countess Lovelace (the daughter of the poet, Lord Byron), translated an article by Charles Babbage which described the Analytical Engine. He thanked her for the translation and suggested she do some original work in the area of computational machines. The Countess replied that this had not occurred to her, but she set about the task, nonetheless. She began adding notes to the translated article. Her notes mention non-numerical computations such as the composing of complex and "scientific" pieces of music. The Countess Lovelace also noted that the machine could not "originate" anything, that it could only do what "we know how to order it to perform."

The next important step in the use of punched cards for computing machines was done by Herman Hollerith. He worked for the U.S. Census Bureau. Hollerith examined the automatic looms developed in France. He used the same idea of punched cards to develop a machine that would record, compile and tabulate census information recorded on those cards. It took seven and one-half years to tabulate the U.S. census of 1880. Hollerith's punch-card mechanical computer did the 1890 census tabulation in only two years. Quite an improvement!

The 1930's brought great improvements in computing machines. Scientists at Bell Telephone Laboratories and Harvard University worked independently on designs for digital computers. Developments were also being carried on in Europe. In 1939, Howard Aiken of Harvard University was able to interest IBM in his plan. Five years later, IBM announced to the public a new machine, the Mark I. It was an automatic sequence controlled calculator. Aiken called his machine "Babbage's dream come true." Other sophisticated mechanical computers rapidly followed.

The beginning of modern electronic computers started with the development of the Electronic Numerical Integrator and Computer, known by its nickname "ENIAC." It was developed at the University of Pennsylvania during 1943-46. The people on the ENIAC project worked enthusiastically with the Armed Forces. The U.S. was deeply involved in World War II and there was a need to provide firing tables for new weapons. This was to be ENIAC's first task. This huge machine needed 18,000 vacuum tubes in order to function. But some things about this computers were similar to the automatic looms built in France in the 1700's. ENIAC used punched cards for its programs.

By 1955, there were forty-four different companies or institutions building computers. Today, there are more than 60,000 different types of computers in use.

The computers of the 1950's were crude by today's standards. The big difference is the transistor. It replaced the vacuum tube. The transistor is very tiny, uses only a fraction of the electricity of a vacuum tube and costs much, much less. ENIAC, with its 18,000 vacuum tubes, filled a room the size of a basketball court. The early personal computer which could sit on a desktop had a million transistors on a chip one might lose between one's fingers if not careful! But electronic technology did not stop with the transistor. Along came the microprocessor chip that is so small it can fit through the eye of a needle. It is these miniature integrated circuits that give name to the new generation of small computers--the microcomputer or microprocessor.

The Origins of the Microcomputer

The first microcomputer was designed by DataPoint, a company in San Antonio, Texas. In 1969, Datapoint contracted with the Intel Corporation and Texas Instruments to build a product Datapoint engineers had designed. Intel succeeded in developing a single logic chip, but it worked ten times too slow. Datapoint did not buy the product. Intel decided to market this elementary microcomputer anyway, calling it Intel 8008. The microcomputer had arrived!

Learning Experience 3

How a Microcomputer Works

****

After completing this learning experience it is expected that the student will:

1. Demonstrate a basic understanding of the hardware parts of a microcomputer
2. Describe the digital processing of information by a microcomputer
3. Explain the term "computer language" and describe the BASIC language used by most microcomputers

****

In order to be called a microcomputer, a machine must have certain basic equipment. These parts are called the "hardware" of the microcomputer.

The Central Processing Unit (CPU). This is the heart of the microcomputer. It is in the CPU that all calculations take place. This part of the CPU is called the arithmetic and logic unit. Another part of the CPU is a unit called an " accumulator." The accumulator is a short-term memory bank where the microcomputer can store a number and then add, subtract or compare other numbers to the one stored there. There are other memory banks like the accumulator which are usually called "registers." The more registers in a central processing unit the more powerful it is. Computing can be done faster and more efficiently when there are lots of places to store numbers, at least temporarily. Finally, the central processing unit has a "control unit." The control unit directs the flow of data and instructions from one register to another and to the arithmetic unit. The control unit is the traffic manager and switchboard of the microcomputer.

The Memory Banks. While the CPU is the heart of the microcomputer, it really does not have much memory. To correct this, two kinds of memory are usually connected to the CPU. The microcomputer uses many "programs" or sets of instruction over and over again. These programs do not need to be changed and are built into the microcomputer. Set programs are stored in a core memory. A core memory is one that will not be erased when the microcomputer is turned off. These set memories are stored in a memory bank called the "Read Only Memory" or ROM. The central processing unit can "read" these set programs; that is, it can get information from the ROM. But the CPU cannot "write" anything in the ROM. The CPU cannot add any new information to the ROM. When the microcomputer is turned off, the ROM circuits hold a magnetic charge. None of the information stored there can be lost.

The information in the ROM is placed there by the manufacturer. When the microcomputer is turned on, then the CPU begins to function. First, it checks with ROM to find out what to do. ROM will tell the CPU what to do. CPU will do its task and then check with ROM for further instructions. ROM is programmed to get the CPU working and to maintain certain basic function throughout the time the microcomputer is in use.

The second type of memory used by the CPU is known as a Random Access Memory or RAM. The CPU cannot only read what is written in the

RAM, but it can also "write" information into the RAM. That is, new information can be added to the RAM. This type of memory can be thought of as a temporary holding space. One advantage of the RAM memory is that it is so constructed that information can be retrieved in any (random) order, without going through intermediate information. This helps to make the RAM fast and efficient. But the RAM has one giant drawback. While new information can be added to the RAM, nothing stays in Ram for very long (unless one never turns off the microcomputer!). When the electric current is turned off for the microcomputer, then RAM goes blank. When a human being enters information into a microcomputer, then that information goes to the RAM. Turn off the microcomputer and the RAM becomes a blank slate!

Information Storage Information that one puts into the Read Only Memory is usually something one wants to save. Where to put this information before turning off the microcomputer? The information in the RAM can be stored either on tapes or discs. These are magnetic media. The electric current from the microcomputer is sent to a tape or disc where it is converted into a magnetic field. Because the storage is done magnetically, anything which produces a magnetic field of its own can seriously affect what is stored on the magnetic tape or disc. For this reason, never use the microcomputer around any appliance which has an electric motor. And do not store discs and tapes where electric motors operate. For example, a friend of the author once produced by computer all of the sound effects for a community theatre production of Dracula and stored them on magnetic tape. Unknown to him, a repair crew outside his trailer had been resurfacing the roadway. The machine that heated the tar was run by a strong electric motor which set up a magnetic field. On the opening night of the play, the magnetic tape was found to be blank. In order to have sound effects for the play, this author spent the opening night of the play backstage howling like a werewolf! So, remember that microcomputer information is stored on magnetic media which must be carefully handled and protected from any source that might mistakenly erase it.

The tapes used by some microcomputers are the standard type of cassettes that are used in tape recorders and some stereo equipment. The discs are either 5 1/4- or 8-inches in diameter. They are nothing more than a circle of the same material that the tape in a cassette is made of. It is a piece of plastic covered with iron oxide, or rust. The discs are known as floppy discs, diskettes, or minidiscs. In this book, the word diskette will be use throughout. The diskette is enclosed in a cardboard cover to protect it from dust, the oil and sweat on human fingers, and misplaced, half-eaten lollipops. Figure 1 is an illustration of the typical diskette.

The diskette fits into a disc drive. The microcomputer that uses diskettes may have one or two disc drives which may either be built in to the microcomputer or be separate pieces of equipment. Additional disc drives can usually be added. It is preferable to begin with a microcomputer system that has two disc drives. The reasons for this will become apparent in later chapters of this student manual.

Input and Output. The microcomputer has its own unique language. It is not necessary to learn this language to be an effective "user" of a microcomputer. The languages used by microcomputers are quite foreign to most humans, but they allow the microcomputer to work at extremely high speeds. What is needed is an input device that has symbols humans are familiar with--like numbers, alphabet letters and punctuation symbols. Each microcomputer has such an input device. It is called a keyboard.

THE MICROCOMPUTER DISKETTE

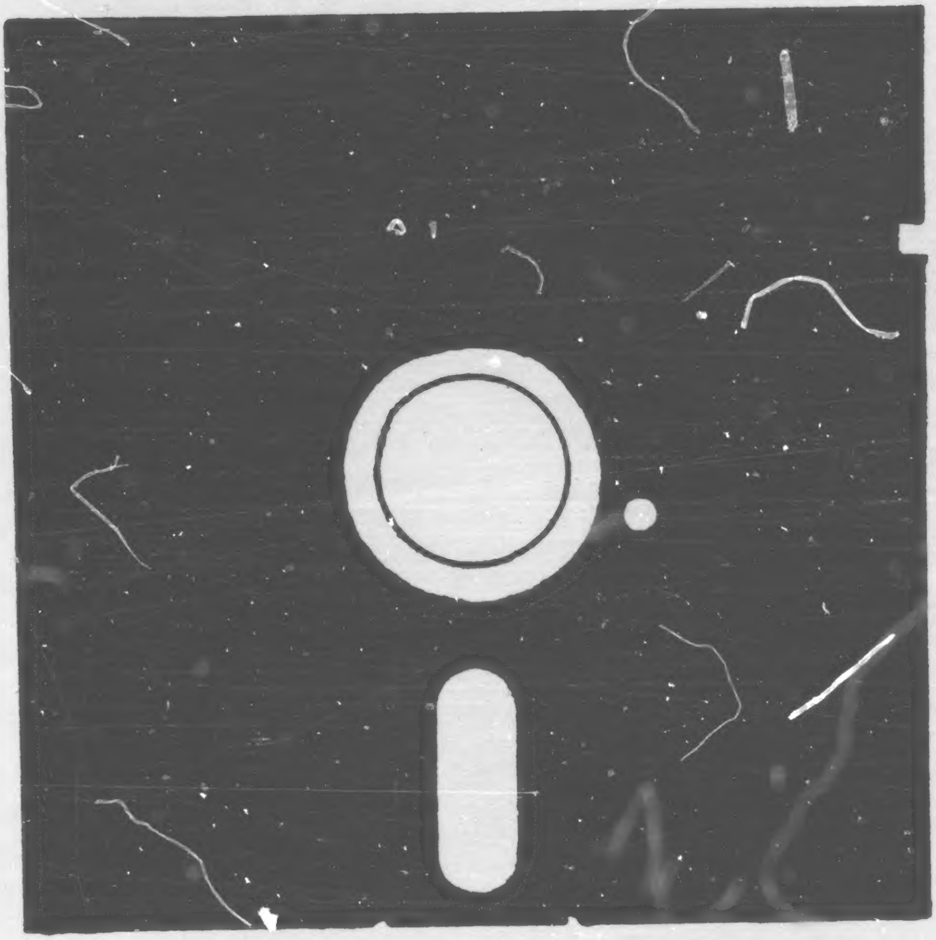

Figure 1

The keyboard is set up much like the keyboard of a typewriter with a few special keys. When a word is typed into a microcomputer using the keyboard that word must be converted into a signal the microcomputer can recognize and use. This is done with an "interface circuit" which translates the keystrokes of the user into an electrical signal which the microcomputer recognizes. Each key on the keyboard has its counterpart in the language being used by the microcomputer. Some of the large computers still use the punched card or punched tape as the input device.

Most of the time, when one is using a microcomputer, there will be a need for a "hard copy" of what has been entered into the microcomputer. For this to occur, the information stored in the RAM must be in a form that can be used by an output device such as a printer. The microcomputer is pumping out data at a rate no printer could possibly handle. The printer must have a special microchip conversion circuit. This conversion circuit is called a Universal Asynchronous Receiver-Transmitter. Its nickname is UART. A UART is built into most microcomputers and every input and output device as well. The microcomputer is connected to the UART in the printer by a series of wires that looks like a plastic ribbon. The UART stores the information it gets from the computer and adds a start signal, a checking signal and a stop signal. The UART circuit controls the speed with which the printer can print a copy of the information onto paper. The most popular speed that UARTs send information to a printer is 30 characters per second. This amounts to 300 five-letter words plus a space per minute. Just try to type that fast!

Microcomputers use one of three types of printers. One is called a "daisy wheel" printer. The printing characters are on plastic spokes which radiate out from a central hub. Hence the name "daisy wheel," for the whole thing looks like a plastic daisy. The maximum speed of a daisy wheel printer is about 60 characters a second. Try to type that fast! This student manual was produced in hard copy form using a Radio Shack TRS-80 Daisy Wheel Printer II.

Another type of microcomputer printer is the thermal printer. It does not need any mechanical motion like the daisy wheel printer. The thermal printer does not use a ribbon. The printer uses a specially prepared paper. When the paper is heated, the white coating changes to black. The printer carriage aims a small bundle of very thin wires at the paper. When an electric current flows between the wire end and the platen, then a dot pattern is created on the paper. The more wires on the carriage, the better the quality of the printed character. One advantage of the thermal printer is that it is quiet because nothing strikes the paper. Also, the thermal printer can print faster than a daisy wheel printer. The thermal printer can print up to 120 characters per second!

A third type of printer is similar to the thermal printer in that is produces characters on the page using a series of dots. And like the daisy wheel printer, the "dot matrix" printer uses a ribbon. The dot matrix printer does not need special paper and is usually the least expensive printer to operate.

The Display Device While one is entering information into a microcomputer it is a good idea to be able to see what is happening. The microcomputer has a display device that allows just that. The most popular display device is a cathode ray tube or CRT for short. It is just like the picture tube of a television set. The CRT is an enclosed glass bottle with a flat face which is the screen of the tube. There is no air in the tube. The tube narrows down to a glass pipe. At the end of the glass pipe is a filament which heats the cathode. The cathode is an electronic gun. It shoots out a controlled stream of electrons which is directed at the flat screen part of the tube. The inner surface of the screen is coated with a phosphor. This substance glows brightly when struck by the electrons. This beam of electrons makes a sweep across the entire face of the screen every 1/30th of a second. That keeps the image on the screen.

There are two limitations to the CRT display. It does not give a permanent copy of what is displayed. Secondly, there is a limit to how much can be viewed at any one time.

There are three ways to get a cathode ray tube display for a microcomputer. In may come as a built-in part of the microcomputer. If the CRT is built-in, then it provides the maximum number of characters that can be displayed on the screen. This is 80 characters to a line with a maximum of 24 lines. Some display circuits have a memory larger than this. To view the entire display, one would need to scroll (using the arrow keys on the keyboard). The scrolling can be done to the right, left, up or down. Another way to get a CRT display is to buy a separate monitor which looks very much like a television set, but it is not. The TV picks up radio waves; the microcomputer monitor uses a video signal and cannot be used as a TV. The third way to get a CRT is to use a regular television set. To use a regular TV as the display device, the microcomputer must have the appropriate modulator circuitry to produce a video signal. This is the least satisfactory way to get a visual display because most TV sets do not reproduce the tiny dots of the alphabetical characters very well. The image on the screen may be blurred. The entire image may shimmer or vibrate as outside signals interfere. When purchasing a microcomputer, take into account the importance of the video display. A poor visual image will make the microcomputer much less enjoyable to use.

Summary These, then, are the hardware pieces that make up the usual microcomputer system. Different manufacturers package the hardware differently. Complete microcomputer systems, usually labeled the home computer, can sell for as little at $1250.00. Do not confuse these with the type of microcomputer needed for a small business. A good small business microcomputer system may cost as much as $5000.00 for the hardware alone. But it will quickly pay for itself.

How a Microcomputer Computes Everything that happens inside of the microcomputer uses numbers. But only two numbers are used--1 and 0. A "digital computer" has only one finger to count on. Perhaps that is why it is called a digital computer. Mostly, we humans use the decimal system which has ten numbers--0 1 2 3 4 5 6 7 8 9. This is called the "base-ten" system because ten different numbers are used. (yes, 0 is a number!) But the microcomputer uses a base-two number system. Why this is so will become clear a little later on in this chapter.

First of all, it is important to know the difference between a "digit" and a "number." A digit is a particular number in a particular place. In the base-ten system, there is a units digit, a tens digit, a hundreds digit, and so forth. The binary or base-two system has a units digit, a twos digit, a 2^2 or a fours digit, a 2^3 or a eights digit, and so forth. The table printed on the next page shows the base-ten and the base-two number systems for the numbers one through ten.

COMPARISON OF BASE-TEN AND BASE TWO NUMBER SYSTEMS

BASE TEN	BASE TWO	
0	0	
1	1	
2	10	Read as "no ones and one two."
3	11	Read as "one one and one two."
4	100	Read as "no ones, no twos and one 2^2."
5	101	Read as "one one, no twos and one 2^2."
6	110	Read as "no one, one two,and one 2^2."
7	111	Read as "one one, one two, and one 2^2."
8	1000	Read as "no ones, twos and fours and one 2^3."
9	1001	Read as "one one, no twos and fours and one 2^3."
10	1010	Read as "no ones,one two, no fours and one 2^3."

The base-ten, or decimal numbering system has a ones column, a tens column, a hundreds, column, and so forth. Each column is a multiple of ten.

The base-two, or binary numbering system has a ones column, a twos column, a fours column, an eights column, a sixteens column, and so forth. Each column is a multiple of two. Keeping this in mind, what base-ten number is represented by the base-two numbers given below:

10001 ______________

1011 ______________

1111 ______________

The binary digit--a 1 or a 0--is called a "bit." The microcomputer can store bits, count with bits and control operations with bits. (By the way, the word "bit" is a contraction of the term "binary digit.") Every time a microcomputer user hits a keystroke, whether it be an alphabet letter, number or special symbol such as "*," the microcomputer converts the keystroke into a binary number. A special group of binary numbers is used for this conversion. The most common conversion code is the American Standard Code for Information Exchange. Its nickname is ASCII which is pronounced "askey." ASCII uses 128 binary numbers seven bits long to represent the numerals 0 to 9, the alphabet characters in upper and lower case and thirty-two printable characters such as + # & and *.

Printed below are some of the binary numbers used to represent the keyboard characters:

1000001	A
1100100	d
0100001	!
0110110	6
0111111	?

The binary digit--a 1 or a 0--is called a "bit." The microcomputer can store bits, count with bits and control operations with bits. (By the way, the word "bit" is a contraction of the term "binary digit.") Every time a microcomputer user hits a keystroke, whether it be an alphabet letter, number or special symbol such as "*," the microcomputer converts the keystroke into a binary number. A special group of binary numbers is used for this conversion. The most common conversion code is the American Standard Code for Information Exchange. Its nickname is ASCII which is pronounced "askey." ASCII uses 128 binary numbers seven bits long to represent the numerals 0 to 9, the alphabet characters in upper and lower case and thirty-two printable characters such as + # & and *.

Printed below are some of the binary numbers used to represent the keyboard characters:

1000001	A
1100100	d
0100001	!
0110110	6
0111111	?

Suppose one is using a word processing program and types into the microcomputer the phrase, "National Association for the Education of Young Children." Printed below is what actually "goes into" the microcomputer:

0100010	1001110	1100001	1110100	1101001	1101111	1101110	1100001	1101100
"	N	a	t	i	o	n	a	l
0100000	1000001	1110011	1110011	1101111	1100011	1101001	1100001	1110100
space	A	s	s	o	c	i	a	t

1101001	1101111	1101110	0100000	1100110	1101111	1110010	0100000	1110100
i	o	n	space	f	o	r	space	t

and so forth, and so on, and on, and on. All the microcomputer can deal with is binary digits. When a human being touches the keyboard of a microcomputer and begins to type, the interface circuit transforms the keystroke into a binary digit. This is why the microcomputer is called a "number cruncher," for all it can actually deal with is numbers. And only two numbers at that! Everything the microcomputer does, it does with two digits.

Why does the microcomputer use the binary number system? Remember that the microcomputer is an electronic device and its energy source is electricity. As far as the tiny circuits inside the microcomputer are concerned, this electricity has only two states. The electricity is either "on" or "off." If the electricity is "on,"then the microcomputer records or reads the number 1. If the electricity is "off," then the microcomputer reads or records this as a 0. The microcomputer does all of this "on and off" stuff at amazing speeds.

Remember that each digit is a "bit." Microcomputers are usually built to work on eight bits at a time. Eight bits is called a "byte." (Some microcomputers use a 4-bit unit. This smaller 4-bit unit is called a "nibble.")

One important fact to know before buying a microcomputer is "how large is the microcomputer's memory?" Another way of saying the same thing is to ask, "How many bytes of memory does a particular microcomputer have?" The letter "K" which stands for "kilo" is used to express the number of bytes in a microcomputer's memory. 1K stands for 1,240 bytes of memory. This, then, is one "kilobyte" of memory. If a particular microcomputer has 16K of memory, then it has 16 times 1,240 or 20,440 bytes of memory. For small business purposes, one probably wants to get a microcomputer that has 64K of memory. More than that one probably wouldn't want to remember!

The microcomputer deals with various units of memory. The smallest is the bit, followed by the byte. The largest unit of memory is called a file. A file can be a data base or a subset of a data base. The file is divided into records. All the data associated with one entry in the file is called a record. The record can be divided into subparts. A field is a subdivision of a record in a data file. So, the memory sizes are: bit, byte, field, record and file.

Computer Languages

Microcomputer "users" are people who can load into a microcomputer's memory a program (called software) and follow the instructions of the program. These program instructions include "menus." A menu is a list of selections written in standard English. The instructions may also include "prompts." A prompt appears within a program when a choice must be made in entering new information into the microcomputer.
Microcomputer users do not need to know how to write programs in order to competently use the system. Computer "programmers" write the software programs for the "users." The programmers must know how to speak the microcomputer's language. These people write long, long listc of statements that tell the microcomputer what to do, what to do next, when to go back and do something again, and when to stop doing anything at all! These are program statements.

One of the most widely used computer languages is called BASIC. This language was developed by John Kemeny and Thomas Kuntz at Dartmouth College. When writing in BASIC, each program statement begins with a numbered line followed by the language statement. The computer examines each line, translates it into machine language, and executes the instructions immediately. Thus, a "program" consists of a set of instructions or statements in line-numbered sequence. There are several versions of BASIC currently available for microcomputers. The differences depend on the amount of memory available and the design of the microcomputer itself. When one purchases a microcomputer, the manufacturer usually includes a simple manual for learning that microcomputer's built-in language. And it will usually be some "dialect" of BASIC.

There are many other computer languages. Most are designed for special functions, such as FORTRAN. This language was designed for use by scientists and engineers. Another computer language is COBOL which is the nickname for COmmon Business Oriented Language. As its name suggests, COBOL is a computer language designed for the business community. A fairly new computer language is named PASCAL and is used by some microcomputers.

If one has a logical mind (or wishes to develop one), then it is possible to write programs for the microcomputer as well as use pre-packaged software. Again, it is possible to get a full range of services from a microcomputer by using prepared software and never becoming a computer programmer!

Learning Experience 4

Getting Started with the Microcomputer

****

After completing this learning experience, the student will be able to:

1. Describe the steps necessary to "power up" the microcomputer system
2. Explain what is meant by "booting" the system
3. Format a diskette
4. Make a "backup" of a diskette

****

Introduction

So far, the first two chapters of this resource guide were developed to assist the student to understand some basic facts about microcomputers and to "demystify" the machine. The value of the microcomputer in child care administration was also addressed. With this learning experience, begins the "hands on" portion of the book. Remember, learning to use a microcomputer effeciently is a challenge, but certainly a rewarding one. The authors of this resource guide have designed to remainder of the material to be a step-by-step guide. Hopefully, no one will get lost.

POWER UP AND POWER DOWN

"Power up" and "power down" are computer jargon for simply turning on and turning off the microcomputer. Most electrical machines can just be plugged into the wall socket and turned on. With the microcomputer, however, it is important to follow a simple series of steps to make sure that a power surge does not go through the microcomputer and that no previously recorded data is lost.

Begin the "power up" sequence by checking that the disk drives are empty. Otherwise, the diskette may be either damaged or erased. Be sure that all of the "peripherals" are turned off. A "peripherial" is any piece of equipment used with the microcomputer that is connected to it, but has its own on-off switch. It sounds rather redundant, but quite important, to make sure that every piece of equipment is turned off before turning anything on. If one is going to use any peripherals, such as extra disk drives or a printer, these should be turned on first. Then turn on the microcomputer itself. It may then be necessary to adjust the brightness of the screen. Check with the instructor to find the appropriate switches on all peripherals and the microcomputer.

When the microcomputer is first turned on, the disk drives will hum for a short while and a light on one of the drives will come on. Wait until the humming stops and the light goes off before doing anything else. (By the way, the light that comes on is called the "drive select light.")

When everything is quiet it is time to insert the program diskette and the data diskette. If the microcomputer has two disk drives, they will be numbered either "0" and "1" or else "1" and "2". Check with the instructor to determine which is the disk drive for the program diskette and which is for the data diskette. Open the drive doors carefully and insert the program and data diskettes into the proper drives. Slide the diskettes into the drive opening carefully. A small "click" can be heard when the diskette is fully inserted; then close the drive door.

When both diskettes have been properly inserted into the disk drives, then press the "reset" button. The microcomputer will hum, lights will flash on and off and a display will come on to the screen.

The computer is now ready to accept data. Usually, the first peice of information that the microcomputer wants to know is the data. There will be a prompt to indicate the form of the date that is to be entered. It might appear as this: Enter Date (MM/DD/YY)? This form MUST be followed exactly as requested. If the date is August 3, 1984, then one would enter: 08/03/84. If one entered 8/3/84, then the microcomputer would merely ask for the date again! And it will keep asking for the date until the user gets it correct. Remember, the computer is "programmed" to accept information and will not vary from its program.

Once one has gotten past the first hurdle of entering the date, the microcomputer will usually ask for the time. The prompt will read something like: Enter Time (HH/MM/SS). One need not respond to this prompt, however. Here, the microcomputer has been programmed to either accept a correct entry of time or no entry at all. Merely press ENTER and the time prompt can be bypassed. There will be more humming and lights flashing. Then finally, the microcomputer will respond with a prompt to indicate that it is READY to accept a program.

Every program has a unique name that must be entered when the microcomputer is at the READY prompt. For example, if one is using the word processing program for the Radio Shack TRS80 Model 4 Microcomputer, then the word "SCRIPSIT" would be entered at the READY prompt. At this point, the program disk drive will light up and there will be some more humming. NEVER ATTEMPT TO REMOVE A DISKETTE WHEN A LIGHT IS ON. Attempting to remove a diskette when the light is on may damage the diskette, as well as the recording head of the disk drive itself. So just don't do it.

When the red light goes off, the the microcomputer has loaded the program into its memory and the program menu will appear on the screen. The menu is a series of selections from which the user can decide what to do next. At this point, the system is "powered up" and operating!

Every prepared program has a series of steps of "exit" or "quit" that program. When these steps have been followed, then it is time to "power down" the system. That is, its time to shut the microcomputer off! Again, one should follow the prescribed steps in the appropriate order. When one "quits" a program, there will again be the humming, whirring, and flashing lights. When the lights are off and the humming stops, then the diskettes can be removed from the disk drives. Remove them as carefully as they were inserted. Then close the disk drive doors. Turn off the microcomputer first, then turn off any peripherals.

The only thing left inside the microcomputer will be the Read Only Memory (the one that stays there always and was put ther by the manufacturer). The program will be on the program diskette and the user generated data will be on the data diskette. The microcomputer silently waits for another "power up."

Formatting a Diskette

One way that Radio Shack, Apple IIe, and IBM PC microcomputers are different is in the "disk operating system" which is employed. This is why a diskette designed to be used on an Apple IIe will just not work on a Radio Shack microcomputer. All of the microcomputers might take diskettes that are 5 1/4 inches in diameter. But a new, blank diskette is just that. It is blank and it will not work in any microcomputer until it has been formatted. Each microcomputer manufacturer has developed a disk operating system that is unique. Before a blank diskette can be used with a particular microcomputer, it must have written onto it the unique operating instructions of the system being used. Writing this information onto a blank diskette is called "formatting" the diskette. A word processing program written for the Apple IIe, such as the Bank Street word processing program just will not work on a Radio Shack TRS80 Model 4 microcomputer. They do not have the same disk operating system.

To use a new, blank diskette, then, it must be formatted. Check with the instructor for a handout for formatting a diskette for the microcomputer being used. Format a blank diskette and let the instructor see the CRT display at the end of the process to check the result.

Diskettes that have been previously used can be formatted. When doing this, the microcomputer will usually display a prompt to tell the user that there is information on the diskette and ask if one still wishes to format. Answering "yes" will start the formatting process.

When formatting any diskette, the microcomputer will usually display several prompts. One of these will be to ask for a name for the diskette. Check with the instructor to find out if there are any limitations to naming a diskette. The next prompt will probably ask for a "password." At this point it is possible to use a system password, that is, a general password known to anyone who is familiar with the microcomputer being used. However, the user can create a password known to no one else. This makes it impossible for anyone else to access the information on that diskette unless the password is known. If special passwords are used, be sure to remember them. Otherwise, no one can get into the diskette to use the data stored there!

How to Make a Backup of a Diskette Microcomputer software is rather expensive and needs to be carefully used. The first thing one should do with any program diskette is to prepare a backup of that program. The original diskette should be properly stored and used only to prepare working copies of the program.

Each microcomputer system will have a different method for preparing a backup diskette. Check with the instructor or the program manual to discover the process for creating a backup diskette for the system being used. In preparing a backup diskette, it is necessary to have a formatted blank diskette in one disk drive and the program to be backed up in the other disk drive. When these two diskettes have been appropriately placed into the disk drives, then a special prompt word is keyed into the microcomputer when the screen indicates that the microcomputer is ready to receive information. For example, when using the Radio Shack TRS 80 model III or 4, the command to begin the backup process is to key in the word BACKUP. The screen will then request the SOURCE drive number. This is the drive that contains the program one wishes to backup. When that is entered, the prompt requesting the DESTINATION drive number will appear on the screen. Finally, a prompt will appear asking for the password. Usually, the microcomputer manufacturer will prepare a general password. Radio Shack uses the word "password" as the password. Not very original, but very, very easy to remember. At this point, unless the destination diskette contains data, the backup will begin.

If the destination diskette contains data, a new prompt will appear on the screen. This prompt will remind the microcomputer user that there is data on the diskette and ask whether the diskette is to be used for the backup or not. One might also get a prompt asking whether or not one wants to reformat the diskette. Unless the diskette has been recently formatted, it is a good idea to re-format the diskette just in case something has happened and some of the diskette is not useable by the microcomputer. This process takes very little time and is worth the effort.

While the backup diskette is being prepared by the microcomputer, some information may appear on the screen. This is for two reasons. First, so that the user will know that the microcomputer is busy and does not want to be disturbed with any new information until the backup task is complete and second, so that if any of the portions of the diskette are unuseable, the diskette can be discarded and a new backup procedure can be executed.

To complete this exercise, make a backup of a program diskette and turn it in to the instructor for evaluation.

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CHAPTER III

STUDENT'S RESOURCE GUIDE

WORD PROCESSING FOR CHILD CARE ADMINISTRATORS

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TABLE OF CONTENTS

Chapter III. - Word Processing Using the Microcomputer - Student's Resource Guide

Introduction - Word processing for child care administrators..Stu-III- 1
    Purposes
    Objectives

1. Pretest on Word Processing Using the Microcomputer (LE1)..Stu-III-3

2. An Introduction to Word Processing on the Microcomputer (LE2)..Stu-III- 5
    -What is word processing?
    -What is word processing as it applies to the microcomputer?
    -References

3. Word Processing Application in the Child Care Situation (LE3)..Stu-III- 8
    -Possible uses
    -Student's suggestions

4. Analyzing Word Processing Needs in the Child Care Setting (LE4)..Stu-III- 9
    -Word processing requirements
    -What to look for when purchasing the word processing program

5. Getting Ready to Use the Word Processing Program (LE5)..Stu-III-13
    -Becoming Reacquainted with the Microcomputer
    -Power up - Format - Backup

6. Using the Word Processing Program (LE6)..................Stu-III-16
    -Steps in word processing on the microcomputer
    -Parts of the microcomputer used in word processing

7. Keying in a Letter Using Word Processing (LE7)...........Stu-III-19
    -Basic keystrokes needed to do learning experience
    -Steps in keying in the letter
    -Writing to memory
    -Printing the letter
    -Sample letter and envelope

8. Editing a Letter (LE8)....................................Stu-III-25
    -Steps in editing (not using blocks)
    -Sample edited letter

9. Editing Using Block-actions (LE9)........................Stu-III-28

10. Editing and Preparing Documents (LE10)....................Stu-III-32
    -Making changes in documents (JOBDESCR)
    -Constructing a document

11. Review and Introduction to Advanced Word Processing Skills (LE11)....................Stu-III-37
    -Review material covered thus far
    -Do a review activity (word processing scroll game)
    -Introduction to more advanced skills

12. Use the Proofread Program (LE12)....................Stu-III-41
    -Electronic proofreading
    -Proofread a letter
    -Proofread job description

13. Advanced Word Processing - Using Special Commands (LE13)....................Stu-III-45
    -Continuous characters
    -Headers and footers
    -The number pad
    -Align tabs
    -Memory or user keys
    -Underscore, double underscore and bold print
    -Printing in columns
    -Sample documents

14. Computerizing Children's Records (LE14)....................Stu-III-51
    -Doing forms on word processing
    -Sample forms (Hard copies are in Instructor's Guide)

15. Managing Correspondence
    -Multiple Mailings (LE15)....................Stu-III-55
      Merging documents (Hard Copies in Instructor's Guide)
      The class list
      The form letter
      The variable document(

16. Managing Word Processing Files on the Microcomputer (LE16)....................Stu-III-59
    -Using the directory
    -Copying documents
    -Compressing documents
    -Using data diskettes for storing documents
    -Setting up computer files

Chapter III

Word Processing for Child Care Administrators

Purpose:

The purpose of this chapter is to teach the utilization of word processing on the microcomputer for child care administrators. The students enrolled in the class will use the microcomputer word processing program available to them in completing learning experiences in this text.

Instructions specific to the utilization of the microcomputer used in the pilot project are included in the instructor's manual. (Version 03 of "SuperScripsit" for the TRS-80 Model III and 4 was used.)

Objectives: After completion of this chapter, it is expected that the student will:

1. Tell what word processing is and explain how it can be used by child care administrators.
2. Tell how word processing can be used in the student's individual child care situation.
3. Explain the terminology that applies to word processing on the microcomputer in a general sense and the terminology for the specific program being utilized.
4. Use the word processing program on the available microcomputer to complete learning experiences as assigned by individual instructors.

5. Edit the information in documents to coincide with a variety of requirements of the learning experiences covered.
6. Develop a plan to teach others in the child care setting how to use the word processing program.

Notes:

Learning Experience 1

Pretest on Word Processing Using the Microcomputer

****

The student will:

Answer the following questions before studying the material in this chapter. If you do not know the answer simply write "don't know." Please use ink.

****

1. Explain in your own words what is meant by "word processing".

2. Why do you think word processing is the most utilized microcomputer program today?

3. When purchasing a microcomputer, what do you need to look for as far as word processing is concerned?

4. List the seven work flow steps of word processing and briefly tell what each one does.

5. What does "scrolling" mean?

6. What is "wrap around"?

7. What is a proofread program?

8. What is the maximum number of characters that can be used in naming a document? ___________ What type of characters does the first one have to be? _______________

9. If the name of a previously created document is forgotten, how can the name be found to access it on the diskette?

10. What is a "cursor"?

11. What is a "ghost cursor"?

12. What does "centering" mean?

13. What is a "global search"?

14. What is a "menu"?

15. What do you wish to gain from learning word processing? (The other side of the page may be used to answer this question.)

Learning Experience 2

An Introduction to Word Processing on the Microcomputer

****

The student will:

1. Read the following material regarding the use of the word processing program with the microcomputer and be prepared to discuss it in class.
2. Read the supplementary readings listed at the end of the learning experience as assigned.

****

Introduction

Word processing is one of the most popular applications for microcomputers and is often the first software acquired by the new microcomputer owner. In a recent survey of microcomputer owners, word processing was the single most consequential computer application. It was also the one with which users were most satisfied. (Consumer Report, Feb. 84). Everyone uses some form of written communication, and the microcomputer makes it easier to compose and print a document. Child care administrators are no exception. The microcomputer can assist in administrative functions and facilitate the creation of the many documents used by the center. With the microcomputer, the document can be composed on the screen, proofread, a first draft printed at amazing speed, the document edited and revised with very little effort, and a top quality printed document produced. The document is electronically filed on a diskette and may be recalled for additional copies or revision at a later day.

What Is Word Processing?

Word processing is the manipulation or processing of words in any fashion whether it be auditorily, with pen or pencil on paper, on a typewriter, or on a computer. According to Peter McWilliams, the processing of words takes place in the mind. He says, "From the word's in one's vocabulary, one selects a clump of them that best fits the idea at hand. Then, by a gradual process - known as polishing in sculpture and editing in writing - the excess is removed and the final work stands alone" (McWilliams 1982).

What is Word Processing on a Microcomputer?

Word processing on the microcomputer is manipulating words on a special program designed for a specific microcomputer. Each brand of microcomputer on the market has its on word processing program with its own unique features.

Word processing includes putting words on the microcomputer, reorganizing them and sending the written word printing electronically. Entering the data (keying it on a keyboard to a diskette) is called input. Data can be entered very rapidly. The microcomputer simplifies the process of document preparation by permitting the user to manipulate information in ways that cannot be done at the typewriter.

Available on almost all word processing programs is the ability known as "wrap around". When the end of a line is reached, the next word is automatically placed on the next line. There is no need to return a carriage or pause to hyphenate at the end of the line, to start over if a word or sentence needs to be inserted, or move a paragraph from one part of the document to another. With a simple command, the microcomputer will do these tasks and immediately display the results. These features greatly speeds up typing.

The need to throw away pages and retype, to correct errors or make changes is eliminated. With word processing, errors are corrected before they are committed to paper. The rest of the document adjusts itself to any changes in the typed line. Similarly, words sentences or paragraphs can be added, deleted or moved without starting over or doing extensive retyping. The microcomputer can organize, search and manipulate information and then file it in an orderly way (Consumer Report, September 1983).

A microcomputer programmed to perform word processing has the capacity to greatly increase the productivity of child care personnel. Time spent on routine office procedures is reduced. Staff will be free to do more with and for the children.

Supplementary Readings:

1. "Computers - Should You Take One Into Your Home?" **Consumer Reports** 48, no. 9 (September 1983): 461-488.
2. "Home Computers for Word Processing." **Consumer Reports** 49, no. 2 (February 1984): 82-97.
3. Megna, K.J. "Computer Basics for Nonprofit Organizations." **The Grantsmanship Center News** (July/August 1983): 15 - 29.
4. McWilliams, P.A. The Personal Computer Book: Los Angeles, Calif: Prelude Press, 1982: 101 - 109.
5. Radio Shack, SuperScripsit Reference Manual: Fort Worth, Texas: Tandy Corporation, 1982.
6. Ziajka, A. "Microcomputers in Early Childhood Education? A First Look." **Young Children** 38, no. 5 (July 1984): 61-67.

Learning Experiences 3

Word Processing Applications in the Child Care Situation

****

The student will:

1. Read the following list of possible uses of the word processing program on a microcomputer for child care.
2. Think through one's own child care center operations and add other applications to the list.

****

The following are some possible applications of word processing using the microcomputer in the child care profession:

* Correspondence
* Children records
* Staff records
* Reports
* Form letters
* Manuals/handbooks for parents and staff
* Training materials
* Lesson plans
* Menu writing and changes
* Recipes

Add your suggestions here:

*
*
*
*
*
*

Learning Experience 4

Analyzing Word Processing Needs in the Child Care Setting

****

The student will:

1. Read and be prepared to discuss the following materials on analyzing word processing needs in the child care center.
2. Investigate the software currently available for use in the child care center. Take an inventory of what is available and what will be needed to efficiently use word processing as described in these learning experiences.
3. If no word processing program is available at the child care center, but a microcomputer is being used for other purposes, investigate the possibility of using word processing on the available hardware. (HINT : Is a microcomputer being used for bookkeeping?)
4. If there is no microcomputer available at the child care center, go to several microcomputer vendors and find out what software would be needed to meet word processing requirements. Find out if anything is available specifically for child day care utilization.
5. Write a report on the findings.

****

Word Processing Requirements

To fully utilize word processing in the child care setting, the following are suggested:

- Microcomputer with at least one disk drive (2 are recommended)
- Printer

- Ribbons for printer
- Print wheels if necessary to use printer
- Word processing program
- Proof reading program (electronic dictionary)
- Floppy diskettes
- Paper for printer

Purchasing the Word Processing Program

Word processing is one of the programs that should be considered first when purchasing a microcomputer. Before buying hardware, find out the capabilities of the microcomputer as applied to word processing. Before investing in a microcomputer, it is important to know what the microcomputer will do with regard to the software programs to be used most frequently. There are some variances in what microcomputers will do as far as word processing is concerned. Read the articles assigned in Chapter II and shop around. Negotiate for a word processing program containing as many features as possible for the money to be spent. Ask the salesperson about:

1. Amount of storage available
2. Number of disk drives and the possibility of expansion
3. Width of the screen
4. Proofreading program (dictionary) availability
5. "Block" manipulation possibilities
6. Merging capabilities
7. Integration with other programs
8. Printer compatibility
9. Assistance and training available
10. Educational discounts

1. Storage Available - 48K is recommended for word processing; 64K or more is better. (Refer to Chapter I for an explanation of "K").
2. Disk Drives - To utilize a word processing program efficiently, a microcomputer should have at least two disk drives. Word processing can be done with one, but electronic proofreading and efficiently managing files requires two drives.
3. Screen Width - Being able to see 80 or more characters on the screen at one time without scrolling saves time when using the word processing program and makes entering data easier.
4. Proofreading Program - If the word processing program has an electronic dictionary available, editing documents will be much easier. The document can be checked electronically against the dictionary which will point out misspelled words. Some proofreading programs will also indicate grammatical errors.
5. Block Manipulation - Moving parts of a document from one place to another, adjusting material, hyphenating, changing line spacing and deleting sections are frequently used functions. A block action feature is very desirable in the word processing program.
6. Merging Capabilities - It is convenient for the microcomputer to merge existing documents with other documents. For example a form letter might be merged with a mailing list. The inside address, salutation and designated reference words can be changed automatically without retyping the letter.
7. Integration with Other Programs - Some computers have the capability of integrating programs. Possibilities include integrating a file management document with a word processing document. This feature permits one to produce form letters, labels

and other documents which require the merging of two programs. If a spreadsheet can be merged with the word processing system, calculations can be done automatically on items such as quantity and price changes in menu planning.

8. Printer Compatibility - To utilize word processing a printer is necessary. A letter ready daisy wheel printer has some advantages in that the finished product looks more like a typewritten copy. If professional quality correspondence is your primary goal, a daisy wheel printer will probably be your best buy. However, a dot matrix printer may meet your needs. High quality copy can be obtained if the printer has the capability of placing the dots very close together. Dot matrix printers are cheaper to purchase and permit the use of graphics. More changes in the size of print and the number of characters to an inch can also be done with a dot matrix printer. A further discussion of printers can be found in Chapter I.

9. Assistance and Training - A reputable vendor will be available to answer questions after purchase, inform you when "patches" come out and return your telephone calls. Training might also be available. Negotiating for these is worth the effort.

10. Educational Discounts - Frequently schools, service centers, and nonprofit organizations can obtain educational discounts. Check these out before you purchase a program.

Learning Experience 5

Getting Ready to Use the Word Processing Program

****

The student will:

1. Become reacquainted with the microcomputer
2. Make a backup of the word processing program and file the original.
3. Format a data diskette.

****

Becoming Reacquainted with the Microcomputer

Take some time to become familiar with the microcomputer. Each microcomputer is different and has its very own unique qualities. Study the screen, the disk drives, the keyboard and the printer. Read the reference manual or handouts from the instructor to find out more about the qualities of the microcomputer being used. Review the material on microcomputers in Chapter II.

Turn on the Microcomputer

With nothing in the disk drives turn on the microcomputer. Refer to Chapter II, the reference manual being used, or ask the instructor how this is done with the microcomputer being used.

Make a "Backup" of the Word Processing Program

It is important that you have a "backup" (a copy) of the word processing program and of subsequent documents that are entered into the microcomputer. The original word processing program is expensive and a copy should be readily available in case all or part of the program is destroyed or lost. The original diskette should be stored in in a safe place, away from the microcomputer. Some original programs are "protected" and copies can not be made, or only a limited number of copies can be made. This possibility needs to be checked with the microcomputer dealer. In these cases, dealers will usually supply the original purchaser with a copy of a diskette if one is accidentally destroyed or lost.

It is possible to loose a program or a document due to an electrical failure or break in the current. Also magnetic devices may cause material to be lost. It is necessary to have a copy so that material is not lost permanently. The most common way material is lost is operator error. On some microcomputers if you turn off the machine or remove the diskette without leaving the program, material that has been entered is lost. Other common reasons for losing materials are by accidentally deleting material, entering improper commands and "freezing" material. Consequently material should be written into memory and backups be made frequently.

To Make the Backup

1. Turn on the printer and the microcomputer as instructed.
2. Follow the instructions carefully for making a backup.
3. Make a label for the backup. (See instructions on the care of diskettes in Chapter II.)
4. Put the label on the backup.
5. Return the original of the word processing program to its envelope and store it in a safe place.

Format a Data Diskette

It is suggested that data be typed on data diskettes rather than on the program diskette. Since the program diskette contains all of the commands for the microcomputer, it does not have much room left for new information. With two disk drives, new information can be written directly to the data diskette and not be placed on the program diskette. However, if the proofread program is to be utilized, the document will have to be temporarily copied to the program diskette because the program commands are necessary to use the proofread program. If a third diskette drive is available, the document does not have to be copied on to the program diskette.

When a diskette has been formatted, it has been prepared to receive information. Space is allocated on the diskette much like space on a piece of paper used in a typewriter. If a new diskette is not formatted, it cannot be used. With some microcomputers, diskettes are automatically formatted when backups are made. With others, the user must do the formatting.

Learning Experience 6

Using A Word Processing Program

****

The student will:

1. Read the following material regarding the use of the word processing program and be prepared to discuss it.
2. Read the material in the reference manual and/or handouts regarding the particular word processing program being used.
3. Review the parts of the computer used in word processing and the steps taken with reference to the program being used.

****

1. Word processing using the microcomputer involves the following steps:

   - Input
   - Proofread
   - Print First Draft
   - Edit and Revise
   - Finish
   - Print
   - File

   A. Input - Input includes all the information entered on the diskette. Input is putting materials "in". Formats such as margins, linespacing, lines per page, pitch and type of document are all entered into the microcomputer. The document is then typed using the microcomputer keyboard and recorded on a floppy diskette. The keyboard is used like a typewriter. Some keys are used for different purposes. A combinations of keys may do different things. These key commands will be different for each microcomputer. Check with the reference manual or instructor for specifics for the microcomputer you are using.

B. Proofread - The document is viewed on the screen and is checked for errors in spelling, grammar, construction etc. If you have a proofread program, spelling can be checked electronically.

C. Print first draft - The document is printed for review. A copy (called a hard copy) is made by entering a print command. Be sure the printer is on and the paper is in the correct position before printing begins. Each microcomputer has its own commands to tell the printer what to do.

D. Edit and revise - The hard copy is read and changes are made as necessary. Material can be manipulated electronically (words, sentences or paragraphs can be changed, copied, deleted or moved on the screen without making a hard copy.

E. Finish - The steps involved in completing the document are referred to as finishing. One may need to scroll left and right and up and down, so the entire document can be checked for accuracy. The proofread program can be used again to double check for spelling errors. The words in the document may be hyphenated by using a block command.

F. Print - The final draft of the edited document is printed on the desired paper. Letterhead can be fed into the printer as one feeds paper into a typewriter. Forms can also be used as they would be used on the typewriter if the proper spacing has been allowed.

G. File - A copy of the document is stored on a diskette in an economical way for future reference. The document can be compressed into a smaller form electronically for economy of storage.(When the document is brought back up, it is as it was originally typed.) The document is then copied on to the data diskette where it is stored. As material from a child care center is placed on the microcomputer, diskettes can be set up allowing for each type of files (correspondence, staff records, children, etc.).

2. Parts of the microcomputer used in word processing.

Review the material in Chapter II, handouts from the instructor and the reference manual regarding the parts of the microcomputer. In word processing, you will use:

* Screen
* Keyboard
* Backup of the word processing program
* Formatted floppy diskette
* Proofread program, if available
* Printer

Learning Experience 7 (Draft III)

Writing a Letter Using Word Processing

****

The student will:

1. Complete keystroke exercise (Figure 1).
2. Copy a sample letter using a word processing program (Figure 2).
3. Print the letter.
4. Make an envelope for the letter (Figure 3)

****

Each microcomputer performs the steps involved in producing a letter differently. Check with the instructor and/or the reference manual for the procedure on the particular microcomputer being used. (Instruction for using the TRS-80 Model 3 word processing software SuperScripsit will be found in the instructor's manual).

Before keying in the letter, become familiar with the following commands (key strokes) on the microcomputer being used: Write the appropriate key strokes beside each command on the form shown in Figure III-1.

After completing the key stroke exercise, key in the letter (Figure III-2) following the sequence below: (Refer to Chapter II, previous learning experiences, the reference manual and/or reference sheet for assistance or ask the instructor.)

1. Turn on the printer and microcomputer.
2. Put the word processing backup program in the appropriate drive.
3. Put a formatted diskette into the appropriate drive.
4. "Boot" your machine to access these two diskettes.

5. Access word processing by entering the appropriate command.

6. Study the "menu".

7. Set up the system commands if this is the first time the diskette has been used. This will establish some general features or systems for all future documents typed on this diskette such as linespacing, operator etc. It is possible to change these if necessary for each document, but convenient to have them standardized. Each microcomputer is different on this, so check with the reference manual or with the instructor.

8. Open the document - Check the prompts of the microcomputer being used regarding how to open a new document and do so. Usually a main menu is available. From that main menu, the open document option is selected. Name the first document LE7/LET and answer the requests. Be sure to request the correct drive to indicate that the document will be typed on the data diskette.

9. Set the margins and tabs. Note the status line and check Chapter 1 and the reference manual. Set margins and tabs as follows:

   Left Margin...........1.0

   Right Margin..........7.5

   Tabs ....1.5 and 5.0

   Save the tab line for future reference.

10. Enter the letter, copying the sample letter (Figrue 2) exactly as it is provided. Include the letterhead.

    a. Key in the letterhead:

    b. Center it as shown using the appropriate key.

    c. Key in the date at tab 50.

    d. Remember to write to memory frequently.

e. Key in the inside address using the capital key as necessary.

f. Key in the body of the letter.

g. Key in the complimentary close at tab 50

11. Proofread the letter by scrolling.

12. Print a draft of the letter.

13. Make necessary corrections by deleting, inserting etc.

14. Print a final copy.

15. Key in the return address and address on an envelope for the letter

    a. Request a new page

    b. On a sheet of paper mark off the size of a business envelope (4 1/4" x 9 1/2")

    c. In the upper left hand corner have the microcomputer print the return address of the center.

    d. At the appropriate place on the envelope, print the address of the parents to whom the letter will go.

    e. Print a copy and check it carefully for spacing.

    f. Insert an envelope into the printer and print an envelope. (Figure 3).

16. Turn the assignment in to the instructor for evaluation.

17. Quit the document. Take out the diskettes and store them.

Notes:

1. This activity was changed from the pilot project to accommodate students' requests for more experience with data input and manipulating materials.

2. With the approval of the instructor, the students may substitute a letter applicable to their individual situation in place of the sample letter. For practice, compose a letter of your own choosing.

Learning Experience 7 (LE7/KEY) - Keystroke exercise on microcomputer being used.

Before typing the letter in Learning Experience 7, please complete the following exercise by listing the key strokes used for each command on the word processing program being used in class.

SIMPLE KEY STROKES FOR INPUT AND EDITING
KEY STROKE EXERCISE

Commands	Keys to Use
Setting margins and tabs	__________
Entering data	__________
Capitalizing	__________
Inserting letters, words, sentences, etc.	__________
Deleting (erase letters or words)	__________
Scrolling (moving left, right, up, down)	__________
Printing the document	__________
Quitting the document	__________
Viewing the directory of documents	__________
Copying the document	__________
Requesting a new page	__________
Write to memory	__________

List below other key strokes that your word processing program uses for simple input and editing

*

*

*

*

*

*

Figure III - 1

LE7 - (Letter to key in) LE7/LET

Longhorn Child Care Center
1234 Longhorn Street
San Antonio, Texas 78229
Telephone (512) 732-2858
****

July 23, 1984

Mr. and Mrs. Tom Hill
5628 Ellison Drive
San Antonio, Texas 78245

Dear Mr. and Mrs. Hill:

It is time to think about a new school year at Longhorn Child Care Center. On Wednesday, August 15, at 7:30 p.m., we will have an open house to introduce parents to our program and to show off the remodeling project we have completed during the summer.

We would like to invite you both to attend. Please bring Paul with you to meet his new teacher, Mrs. Marsha Dalton, and to see his new classroom. It will be good to be open again and to see all our returning children and parents and to greet new ones. The remodeled building will double the capacity of our center and will be worth the two months of closing this summer.

We look forward to seeing you on August 15. Please call Alice Stillman, our assistant director, at 733-2858 to let us know if you will be coming.

Sincerely,

Rebecca Ortiz, Director
Longhorn Child Care Center

RO/nlz

Figure III - 2

Envelope for letter - LE7

Longhorn Child Care Center
1234 Longhorn Street
San Antonio, Texas 78229

Mr. and Mrs. Tom Hill
5628 Ellison Drive
San Antonio, Texas 78245

Figure III - 3

Learning Experience 8 (Draft III)

Editing a Letter

****

The student will:

1. Review commands used in the word processing program being used.
2. Edit the letter keyed in, in Learning Experience 7.
3. Print the new letter.

****

With word processing it is possible to make changes in the letter with a minimum of effort and without rekeying in or starting over. Before proceeding ahead check the menu and be sure the "system setup" is correct and that all of the "defaults" have been entered. If you are unclear, check with the reference manual and/or the instructor.

There are two kinds of editing that can be done with the word processing program. Simple editing involves scrolling across the document to find errors, checking the screen for anything out of place, printing a hard copy of the document, manually checking it, noting changes, making the changes on the word processing program using the keys studied so far (delete, insert, scroll, etc.), again checking for errors, printing and proofreading manually. More avanced editing will be covered in future learning experiences when block actions and electronic proofread programs are studied. At this time, the letter typed in Learning Experience 7 will be editied using simple editing techniques.

1. Review the commands learned in Learning Experience 7.

2. Make the following revisions in the letter keyed in:

   A. Change the margins to 1.5 and 7.0.

   B. Change the tab setting to 2.0 and 4.5.

   C. Change the day of the meeting to Tuesday, August 14.

   D. Indent each paragraph 5 spaces.

   E. Place the date and complimentary close at 4.5.

   F. Delete the last sentence of paragraph 2.

   G. Delete the word "both" in paragraph 2.

   H. Change the teachers name to Ms. Marsha Dalton.

   I. Change the words "to see his new classroom" to "to visit his new classroom".

   J. Purposely spell 6 words wrong so you can later change them electronically.

3. Print the letter again with the above changes.

4. Look at the letter and make other changes you see beneficial.

5. Print the letter again with your changes.

6. Circle the errors and put it aside for later reference.

Notes:

1. Sample letter on master diskette (LE8/LET) with misspelled words. Hard copy is provided here as a sample. The student may want to individualize this letter to meet needs.

LE8 - Edit a letter - (LE8/LET) misspelled words are okay

Longhorn Child Care Center
1234 Longhorn Street
San Antonio, Texas 78229
Telephone (512) 732-2858

****

July 23, 1984

Mr. and Mrs. Tom Hill
5628 Ellison Drive
San Antonio, Texas 78245

Dear Mr. and Mrs. Hill:

It is time to think about a new school year at Longhorn Child Care Center. On Tuesday, August 14, at 7:30 p.m., we will have an open house to intrce parents to our program and to show off the remodeling project we have completed during the sumner.

We would like to invite you to attend. Please bring Paul with you to meet his new teacher, Mrs. Marsha Dalton, and to visit his new classroom. It will be good to be open again and to see all our returning chilren and parnets and to greet new ones.

We look forurad to seeing you on August 15. Please call Alice Stillman, our assistant director, at 733-2858 to let us know if you will be coming.

Sincerly,

Rebecca Ortiz, Director
Longhorn Child Care Center

RO/lr

Figure III - 4

Learning Experience 9

Editing Using Block Action

****

The student will:

1. Edit the letter using "block action commands". (Use LE8/LET)
    - deleting, moving, copying or adjusting words, phrases, sentences, pages or the entire document
    - searching for and deleting or replacing specific words or phrases
    - hyphenating the document
    - changing the line spacing
    - adjusting tabs and margins
    - freezing portions or all of the document

****

Check the microcomputer being used to determine if it permits any or all of these options. The reference manual or the instructor will help in determining this capability. Read how to carry out these commands and then complete the following exercise.

1. Many microcomputers will permit moving sections of the document from one place to another by blocking off parts and moving them. A microcomputer with this capability greatly faciliates editing and the preparation of a final copy. In this learning experience, a section of the document will be called a "block". Manipulating "blocks" will be referred to as "block-action". By using "block-actions" parts of the document can be deleted, moved, copied, or

adjusted. Make the following changes in the letter using the letter prepared in the previous learning experiences:

A. Copy the entire document using block action by "blocking off the document at the beginning and again at the end. Execute the "block action command" to copy and then the command to recall. The entire letter will be copied. Two copies will now be available.

B. Move to the end of the first letter and put in a new page marker.

C. Using the copied document, block off the last sentence of paragraph 2 ("The remodeled building etc"....) and delete it.

D. Block off the complimentary close and place it at tab stop 4.0.

E. Adjust the entire document to contain this new tab setting.

F. Change the line spacing of the letter to double spacing.

G. Adjust the spaces between paragraphs so that spacing throughout the letter is identical.

2. It is frequently convenient to find a single word or a group of words in a document and delete the word or replace it. For example it would be possible to find all the times that the word "disc" was used in this text and change it to "diskette" by asking the microcomputer to search the document for the word and replace it. In the same manner a word can be deleted or pointed out. This is called "global search" or "search and replace".

A. Using the search block command, replace the word "program" each time it occurs with the word "center".

B. Ask for an indication of how many times "Longhorn" is used in the document. How many are there?

C. Ask for the number of times "his" occurs. Circle them on the hardcopy.

3. A letter is more aesthetically pleasing when the right margins are nearly even. There are two ways to do this. One is to hyphenate long words at natural syllable breaks. The second is to use "proportional printing". When this printing is used, the right margin is even and the spaces are proportioned within each line. This is called "right justified". Hyphenating words will make for better looking copying in either case.

A. Using "block action" hyphenate the letter. Were there any words that could be hyphenated?

B. Print the new letter, using regular printing and again using proportional printing.

4. After typing a letter, it is sometimes necessary to change the location of parts of the letter or to indent something that was not previously indented.

A. Indent each paragraph five spaces by establishing a tab setting five spaces in from the new margin.

B. Adjust the tab line to include this tab setting throughout the document by using a "block-action."

5. It may be necessary to freeze a block so no changes can be made in it. A block may be unfrozen if the exact spots of freezing are recorded.

A. Freeze the complimentary close of the letter. Try to change it by replacing the word "Sincerely" with "Yours truly". (This cannot be done unless the block is unfrozen.)

B. Unfreeze the block so this can be done. It is important that the place the block was frozen be written down or remembered. Unfreezing the block involves knowing precisely where the block was frozen.

6. Print the new altered letter and compare it with the letter keyed in in learning Experience 7.

7. Be prepared to discuss applications of block-action when managing correspondence in the child care center. What are some ways time can be saved?

Learning Experience 10

Editing and Preparing Documents

****

The student will:

1. Use the word processing program to make changes in a prepared document. (LE10/JOB)
2. Create a new document.

****

There are many forms and documents used in the administration of a child care center. If these documents are on the word processing program,additions and corrections are much easier to make. The students will take a prepared document and make changes in it. Techniques covered earlier will be practiced in doing this learning experience. The student will prepare a document of their own.

For purposes of this text, a simulated child care center has been established. Documents used throughout the text will refer to this center, "The Longhorn Child Care Center" in San Antonio, Texas. Any similarity to a real center is coincidental. All information was developed for the purpose of this worktext. The following procedures are to be followed:

1. Copy the document "LE10/JOB" from the master diskette to a data diskette.
2. Make a hard copy of the "Job Description" document, and study it carefully.
3. Bring the document on the screen and turn on the view mode so the commands that have been placed in the document can be seen.

4. Make the following changes in the document:
    A. Use block-action to make Section II "Qualifications" come first in the document.
    B. Delete section "C" from responsibilities. A new cook has been hired, and she wants to do her own shopping and food ordering.
    C. Adjust the numbering and lettering to coincide with the moves.
    D. Change the linespacing so the entire document is double spaced.
5. Align each section so that the finished document has the following configuration, with lines being indented evenly as follows:

    I. xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

      A. xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

         xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

           1.xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

6. Using the search and replace feature of your word processing program, change the word "center" to "program".
7. Use the electronic "Help" feature of the word processing program (if it has this feature) to request help whenever it is needed during this learning experience.
8. Hyphenate the entire document using block-action.
9. Block off the new Section II, "Responsibilities" and print it in order that it may be given to prospective applicants.
10. Block off the entire document and make a copy of it. Proofread the document manually. Set it aside for later proofreading with the electronic proofread program if the word processing program being used has that feature.

Practical Evaluation

1. Prepare a job description of 2 pages for any position desired within the child care center, following the general format of the job description included here, but meeting the needs of your center. Use at least 3 levels of indentation for subparagraphs in the document.
2. Print out the job description and turn it in to the instructor for evaluation.

LE10 - Job Description Document -(LE10/JOB)

LONGHORN CHILD CARE CENTER

JOB DESCRIPTION

Job Title: Assistant Director of the Center

Responsible to: Center Director

I. Responsibilities and duties:

A. Be on duty at the Center on days designated by the Director or the employment contract

1. Daily Center hours will be rotated with the Director to assure administration by a legally responsible person at least 7 1/2 hours per day

2. Additional time will be expected periodically for such duties as parent meetings, staff meetings, and other professional duties

B. Assist with the maintenance of the physical environment including adequate materials and supplies for Center operation

C. Assist with food service including writing shopping orders, and purchasing and storing food and kitchen equipment

D. Observe and record significant individual and group behavior of children for Center records

E. Answer the phone and relay messages

F. Type and perform other clerical duties

G. Assist with the supervision of the Teacher Aides

H. Assist with maintaining all Center policies and records

I. Contribute to success of parent involvement

J. Represent the Center to the public

K. Participate in such health and safety practices as first aid care, fire drills, and actual emergency evacuations

L. Open the Center and inspect it for health and safety hazards each day before admitting children; receive children (including health check) and parents each day

M. Work as a Substitute Teacher in the classroom when needed

N. Read and agree to abide by the State Minimum Standards for Day Care Centers

O. Extend professional knowledge through personal readings and attendance at in-service staff training (minimum of 12 hours per year)

P. Perform other duties as needed

II. Qualifications:

A. Minimum of Associate Degree in Child Development or Early Childhood Education and/or Child Development Associate Credential

B. Preferred teaching and/or directing experience with children under six

C. Ability to select and organize educational activities in areas of emotional, social, physical, and intellectual development appropriate to the young child's needs

D. Ability to work and plan cooperatively with other members of the Center staff

E. Ability to maintain and be responsible for prompt submission of required records and reports

F. Good physical and emotional health and a current health card

G. Possession of an American National Red Cross First Aid Card (Standard Course)

Learning Experience 11

Review and Introduction to Advanced Word Processing Skills

****

The student will:

1. Review what has been covered in Learning Experiences 1 - 10.
2. Consider some more advanced word processing techniques.
3. Complete a word processing game.

****

Thus far in this class, material has been covered to help the child care administrator feel comfortable with one of the first applications of the microcomputer.....that of word processing. The preparation of forms and the handling of correspondence are two of the primary uses of word processing for the child care administrator.

With the material covered, many of the clerical jobs of the child care center can be accomplished. A simple letter has been typed and envelopes made to send that letter. The letter has been edited and revisions made. A job description has been input into the word processor, manipulates made with it, and it has been stored for future use.

There are many more complex functions that the word processing program can do. When there are many numbers to type, a number pad is convenient. The underscore, double underscore, bold type, subscript and superscript features of some word processing program is very useful when many forms are made or when papers are written. "Headers" and "footers" (notations that appear at the top and bottom of consecutive pages) are handy to have. "Memory" or "User" keys are convenient when phrases or short sentences are used over and over again.

Several procedures that can be done on the word processing program, such as making class lists, completing immunization record lists, typing form letters and sending them to many parents, and making labels for envelopes, are easier to do on a file management (data base management) program as is discussed in Chapter IV. The introduction to these functions here is for persons whose microcomputer does not have the capacity to do file management for those who do not own the program.

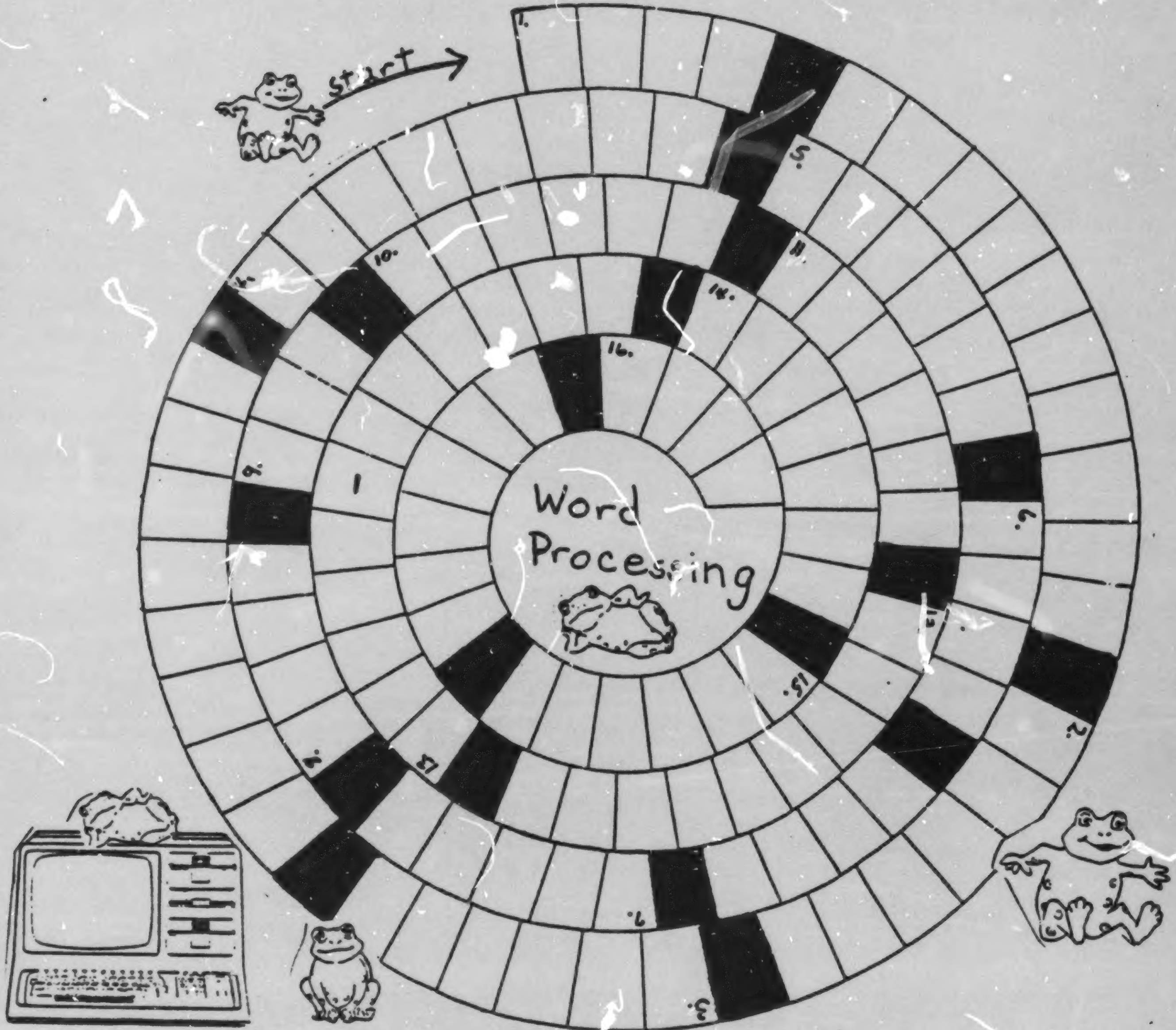
Some of the above applications are covered in the following advanced learning experiences. They are offered here for the assistance of the child care administrator in their utilization of the word processing program. In most instances, these applications were mentioned or discussed in the pilot program, but time constraints made it impossible to do them on the microcomputer. It is hope that the student has time to explore these applications further. Not all word processing programs have all these capabilities, and some have more. Those mentioned are all available on the TRS-80 Model III and 4 SuperScripsit that was used in the pilot program. For some procedures, the student will need to consult their reference manuals and/or instructors.

Before moving on to the more advanced learning experiences, the student is to do the "word processing scroll game" on the following page as a review and evaluation of materials covered in Learning Experience 1 through 10 and turn it in to the instructor for evaluation. Individual instructors may wish to have a test or quiz or a practical application exercise to further evaluate progress and learning.

LE11/ - Word Processing Game (Sprial/L11)

Word Processing Spiral Game

Complete the following "word processing spiral" using terminology that applies to the microcomputer utilization of the word processing program. Answers can be found in the Instfuctor's Resource Guide on page 41. A blank spiral is included on page 39 in order that an individualized game can be constructed utilizing other word processing progrms


start
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.
13.
14.
15.
16.
17.
Word Processing

1. A method for preparing printed documents such as letters, forms and reports using the microcomputer is called __________ ______________.
2. To ______________ a program is to enter it or go into it.
3. Data is stored on a __________________ _____________ which goes in a disc drive.
4. Information is stored in the directory on a ______________ which is given a name such as "LETTERS".
5. To make a copy of a program diskette is called making a ___________
6. When you print a document on paper, the resulting copy is called a ____________ ________.
7. When you enter information into a microcomputer, it is called __________
8. The ____________ is a list of all the possibilities available.
9. To indent to a specific spot you set a ____________ stop.
10. The status line also tells you where the ______________ are set.
11. The ______________ is a blinking symbol that tells you where you are in a document and what will happen next.
12. _______________ is to move up, down, left or right on the screen or document so you can see other parts of it.
13. Moving parts of the document from one place to another, adjusting deleting, hyphenating, printing or reorganizing them is some way, is called ____________ ______________.
14. When you make insertions, deletions and other changes it is called ______________ the document.
15. To search a document to find a word or symbol every time it occurs is called making a ______________ _____________.
16. To ______________ a document is to finish with the document and to leave it, at least for the time being.

Learning Experience 12

Use the Proofread Program

****

The student will:

1. Proof read documents using an electronic proofreading program.

****

Most word processing programs have as a companion program an electronic proofread program frequently called a "dictionary". With a proofread program, it is possible to check a document for spelling errors against the words in the proofread program. For most word processing programs, the dictionary is available at an additional cost. Most proofread programs include from 35,000 to 75,000 words, with the capability of adding words up to a maximum capacity.

The proofread program checks each word in the document against the words in its dictionary. If a word it is not found, a prompt tells the user that the word is spelled incorrectly and asks if it should be corrected. In most cases the operator must correct the spelling by entering in the correct sequence of letters. A few proofread programs provides alternate spellings. If this is a desirable capability, it should be investigated before buying the word processing program. Most proofread programs will have an additional prompt asking whether the word should be added to the dictionary. Words that are frequently used, can be added, remembering that these words will have to be search too when the program checks "its dictionary".

Most proofreading program cannot tell the difference between words that are spelled differently but sound alike such as "there" and "their" or "hour" and "our". No indication will be made that these words are spelled incorrectly since they are all the correct spelling of a word that was found by the electronic searcher.

In this learning experience, the student will proofread two of the documents from the data diskette--the letter document the students have entered into the program and the revised job description document. Corrections will be made and new hard copies produced. Check carefully with the reference manual for the microcomputer being used to determine how to use the proofread program. In most cases the student will:

1. Make a backup of the proofread program that is compatible with the word processing program being used. Return the original to the instructor.
2. Copy the document that is to be proofread to a program disc if the program commands are not available. With three disc or more disc drives or when the word processing programs is in the microcomputer's memory and not on a separate diskette, this will not be necessary. Check the reference manual for the micro computer being used to decide where your document and program should be.
3. Electronically proofread the letter that was typed in Learning Experience 8, making the necessary spelling changes. Quit the document. The revised document will now be on the program diskette, and it will be somewhat different from the original document since the spelling errors will have been corrected. The original document should be should be replaced with the new copy. In order to do this, the original will need to be "killed". When this is done, care should be taken so that the corrected copy is not the one that is "killed". One way to do this is to give your new document a new name such as" LETTER1" or "OPENHOUS." On most programs the name cannot

be any longer than 8 alphanumeric characters, with the first character having to be alpha (letter).

4. Make a hard copy of the letter. Compare the proof read" copy with the original copy. Would hyphenating the letter at any point be desirable? If so, hyphenate by using block action.
5. If your printer has the capability, print the letter again requesting "proportional printing". Compare the two hard copies. The right margins are all even on the copy using proportional printing, however, if it were not hyphenated, there will be blank spaces throughout. Decide which letter is more pleasing and use the applicable method of printing in the future.
6. Proofread the corrected job description document "LE10/JOB" using the proofread program. Proofread any documents you may have typed for practice.

Note:

A proofread program for a word processing program can be a great time saver and a genuine plus for a busy child care center. Correspondence, announcements, forms and papers will be free of misspelled words (with the exception noted previously). Checking this feature before purchasing the word processing program is an important consideration.

LE12 - Letter from LE8 after proofreading electronically (LE12/LET)

Longhorn Child Care Center
1234 Longhorn Street
San Antonio, Texas 78229
Telephone (512) 732-2858
****

July 23, 1984

Mr. and Mrs. Tom Hill
5628 Ellison Drive
San Antonio, Texas 78245

Dear Mr. and Mrs. Hill:

It is time to think about a new school year at Longhorn Child Care Center. On Tuesday, August 14, at 7:30 p.m., we will have an open house to introduce parents to our program and to show off the remodeling project we have completed during the summer.

We would like to invite you to attend. Please bring Paul with you to meet his new teacher, Mrs. Marsha Dalton, and to visit his new classroom. It will be good to be open again and to see all our returning children and parents and to greet new ones.

We look forward to seeing you on August 15. Please call Alice Stillman, our assistant director, at 733-2858 to let us know if you will be coming.

Sincerely,

Rebecca Ortiz, Director
Longhorn Child Care Center

RO/lr

Figure III - 5

Learning Experience 13

Advanced Word Processing - Using Special Program Commands

****

The student will:

1. Make an advertisement, brochure, flyer or other document using some or all of the following advanced word processing functions:

- Continuous Characters
- Headers and Footers
- The Number Pad
- Align Tab
- Memory or User Keys
- Underscore, Double Underscore and Bold Print
- Printing in Columns

****

Child care administrators frequently find the need for creating an advertisement, brochure, flyer or other document for their center. Using the word processing program of the microcomputer, such documents can be created easily, changed readily, and saved for future use as they are needed.

Continuous typing of a character is done by holding down one key for the desired length of time. On most keyboards all keys are capable of doing this. When the number of characters desired are entered, the key is released. If it is desirable to have the characters center, this can be done by pressing the keys for centering.

It may be desirous to have the same heading appear on page after page of a multi page document. When this is done, it is called a "header". Numbering pages consecutively is useful throughout a document. When these numbers appear at the bottom of the page, it is called a "footer".

Many microcomputers have a number pad separate from the numerals on the typewriter. If numerals are used a great deal in entering data, this pad is more convenient to use than are the regular numbers. When using many numbers in columns it is convenient to be able to "align" them.

Frequently the same words or groups of words are typed over and over again in a document. Some microcomputers have the ability to store a designated number of standard words, phrases or sentences. These stored items can be recalled with the touch of one or two keys rather than typing the entire statement. If the microcomputer being used has this feature, use it to save the word "workshop" and the phrases, "per day cost", and "getting ready for" which are used several times in the sample documents.

Underscoring, double underscoring and typing in bold type are often useful. Many word processing systems have these features. Some printers do not have the capability of executing these commands. Check the printer being used to be sure it has the capabilities of underscoring and bold typing.

After reading the above material, the reference manual for the microcomputer being used, obtaining approval from the instructor, and laying out your plan on paper, do some or all of the following activities.

1. Copy the "New Rate Scale" document (making changes to fit your individual child care setting)

2. Copy the "Longhorn Announces Reopening" document (making changes to meet needs)
3. Copy the "Workshop Notice" making two columns.
4. Prepare a one page, two column document, about a subject of your own choosing.with at least 30 lines of text. The document should have a title in capital letters and centered, something underlined, and use at least one continuous character.
5. Prepare a column (2 1/2" wide by 5" long) advertisement to place in the local newspaper, advertising the child care center to attract new business. Content is up to the individual student. Use the following features:
6. Use a header on all of the documents prepared. (Refer to the "Longhorn" heading on the sample documents in master disketts from project.)
7. Number the documents consecutively using a footer.

LONGHORN CHILD CARE CENTER
1234 Longhorn Street
San Antonio, Texas 78229
Telephone (512) 732-2858
****

LONGHORN ANNOUNCES REOPENING

OPEN HOUSE - AUGUST 25 AND 26, 9:00 - 5:00

Our remodeling project is finished, and we are ready to reopen for the new school year. Please join us!

New services include:

* Infant and Toddler Care
* Pick up at schools within a 10 mile radius.
* Home delivery
* Nutritious Snacks (no sweets)
* On Call Medical Services
* New Modern Adventure Playground
* Interest Center Approach to Learning

Our teachers all have Associate Degrees in Child Development
or a
CDA Credential
and are members of the
San Antonio Association for the Education of Young Children

We are proud of what we have to offer and want to share it with you.
Do come in to visit with us soon.

LONGHORN CHILD CARE CENTER

1234 Longhorn Street
San Antonio, Texas 78229
Telephone (512) 732-2858

****

New Rate Scale

****

Thank you San Antonio!

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PRESENTS

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Workshop 1 Parent - Staff Relationships	Workshop 1 "We Speak for Children"
Workshop 2 Places to Take Children in SA	Workshop 2 Licensing Standards
Workshop 3 Children Learn through Play	Workshop 3 Panel Discussion - Guidance

Learning Experience 14

Computerizing Children's Records

****

The student will:

1. Study the record forms being used by a child care center.
2. Copy the forms and complete one using data from the student's own child care setting.
3. Revise the forms to fit individual child care center needs.
4. Key in data for at least two children.
5. Set up a computerized file system for the child care center.

****

Clerical tasks that have been done manual can be completed much more rapidly and efficiently on the microcomputer. Records can be accessed and information checked without sorting through a file of materials. Many forms are used in a child care center to record information rearding the children and staff. Five forms that are frequently used in a center are studied in this learning experience ----"Class Lists", "Child Care Agreement Form", "Child's History", "Medical History Record" and "Immunization Record". These forms can be found on the master diskette with the pilot program. Hard copies are included in the Instructor's Resource Guide. After copying the forms from the master diskette to the students data diskette, the student will change the forms to meet the needs of their child care center. The revised forms will be used to make a record file for two children in the child care center.

Data entry is time consuming, and in the beginning, the child care administrator may feel that there is not time to do this task. If a staff member is available who types well, this person can be taught to use the keyboard of the microcomputer with only a few lessons, and the administrator would be relieved of that clerical task.

After completing this learning experience and keying in the records from the individual child care center, it will be possible to recall records and see all of the necessary information on the microcomputer screen. Records can be keyed in under specific headings such as "Medical Records", "Enrollment Information", "Immunizations," and so on. A record of children could also be maintained which would permit the viewing of the complete records of a child, as one would look into a file folder.

It is suggested that the area records be keyed in first, and the children's file be developed as one becomes more accustom to the microcomputer. In Chapter IV, "File Management", an easier technique of producing forms and list will be learned which will greatly facilitate managing the files. At this time, the student should practice, using several records and put this assignment aside to be referred to when "file management" is discussed. If a "file management program is not available in the child care center, records can be computerized utilizing only the word processing program, but lists and forms will have to be constructed manually.

The following steps should be followed in completing this learning experience:

1. Add the five forms listed below to the data diskette by copying them from the master diskette.
    - List of children (CLASS)
    - "Child's History Form" (CHILDHIS/L14)
    - "Child Care Agreement" (CCAGREE/L14)
    - "Medical History Record" (MEDHIS/L14)
    - "Immunication Record" (IMMUHIS/L14)
2. Make 2 hard copies of each of these forms. (Sampple hard copies are in Instructor's Manual.)
3. Fill in one copy of each form using the data from one child in your child care facility.
4. Study the forms carefully to decide how the forms could be changed to meet the needs of your child care facility.
5. Copy each form using "block action" so you have a copy to work with but still have the original form for reference purposes.
6. Make changes in the forms as applicable for your child care facility.
7. Make a hard copy of the changes.
8. Fill in data from a child, using the forms created.
9. Revise the forms to fit the needs of the individual center.
10. Make a hard copy of the form.
11. Using block action, copy the forms and fill them in on the microcomputer, for 2 children in your child care facility.**
13. Start microcomputer files for the areas i.e. "Medical History", etc. or for an alphabetized "children's" file or both.
14. Devise a plan to teach another staff member to enter the data so the director does not have to do this.

Notes:

1. The class list was prepared using the word processing program. It is included to provide the student with names and addresses if needed.

2. This learning experience is a culminating one for the chapter on word processing. If the student is not currently employed in a child care facility, simulated records can be devised.

3. This learning experience was suggested by several members of the class in the pilot study as one they thought desirable. It was not used as part of the class due to time constraints.

Learning Experience 15 (Draft III)

Managing Correspondence - Multiple Mailings

****

The Student will:

1. Prepare a form letter and merge it with a list of parents.

****

In Learning Experience 7, a letter was keyed into the word processing program on a document entitled "LE7/LET". In Learning Experience 8, the letter was edited and a document created called "LE8/LET". A personalized letter, such as this, could have been sent to all of the parents in the child care center if the inside address, salutation, name of the child, reference to his/her, and the name of the teacher were changed. That is a lot of changes to make, and most child care administrators would decide that it was impossible to send a personalized letter, and elect to construct a standard letter and make copies to send.

Personalized letters can be sent to everyone on a mailing list using the microcomputer if the model being used has the capability called "merging". There are two ways to do produce personalized letters on the microcomputer. The easiest is by merging a form letter keyed into the word processing program with a list of parents in a "file management" file. Once the data has been keyed in the program, it can be manipulated in many ways. The second way to prepare personalized letters is to key in a letter using the word processing program, and making a "variable" document with which to merge it. A form letter is a letter that is printed more than once, inserting different information (variables) each time. The variable document consists of a list of the items that will vary (i.e. parent's name, address, zip code, child's name, etc). Once a variable is made for a group of names, address, etc., it can be used over again with any form letter contaning the same variables.

A variable document will list these variables with a special symbol before each variable. By placing the same symbols in the appropriate places in the form letter, the two documents can be "merged" (brought together). Each time the program encounters the symbol it will enter the variable. It sounds complicated, but really is an interesting application and quite easy to use once the techniques has been mastered. Careful preparation of both the form letter and the variable document are necessary to get this to work, but it can be done successfully with only a word processing program if the model of microcomputer being used has that capability.

Check with the reference manual from the microcomputer being used and/or with your instructor to see if merging is possible. If it is, proceed with the following exercises

1. Prepare the form letter - Use the letter edited in learning experience 8 and placed on the data diskette as LE7/LET, or construct a letter of your own to be sent.
2. Follow the instructions for your word processing program on how to prepare this form letter. These instructions will tell you where to put in codes to indicate a variable. A sample letter can be found on the master diskette. A hard copy is inculuded in the Instructor's Resource Guide.

3. Prepare the variable document from the list of parents to whom the letter is to be sent. This document will be a document with all the items that will vary typed in a very specific way with defining characters to indicate where variables are to occur. It is important that both the form letter and the list of variables be typed very precisely. Take your time and follow the instructions carefully. A sample variable document for the TRS-80 word processing program is on the master diskette and the Instructor's Resource Guide.

4. Merge the two documents following the instructions carefully. When both documents are keyed in, check your instructions carefully recording how to merge the two. The word processing program will automatically merge the form letter with the list of variables.

5. Print copies to be send to at least five parents.

Notes:

1. This is a supplementary learning experience to demonstrate the capabilities of a word processing program. In the pilot program, this activity was not completed using the word processing program only. It was done to demonstrate the capability of integrating the file management and the word processing program.

2. The instructor's manual and the master diskette for the pilot program includes a sample of the form letter and the variable document.

3. With some microcomputer models, it is possible to integrate other programs in addition to the file management program and word processing program. The TRS-80 software used in the pilot project, permits the integration of word processing with the spreadsheet as well as with file management. Check the reference manual to see if this is possible. (The

file management program will be discussed in Chapter IV and the the spreadsheet program in Chapter V.)

Learning Experiences 16

Managing Word Processing Files on the Microcomputer

****

The student will:

Manage the files that have been produced by:

- Using the directory to see what is on a diskette.
- Copying documents from one diskette to another.
- Compressing documents to take less room.
- Using data diskettes for storing similar documents.

****

Managing the data that has been keyed into the word processing program is a very important part of efficient utilization of the program. Each document that has been keyed in has been entered on a diskette and stored as a "file". The more files that are created, the greater will be the necessity to organize or manage those files in order to conserve space on diskettes. Listed below are some of the key strokes that will be needed to manage files. Check the word processing program being used to see how to do the following:

Backup - copy the complete contents of one diskette to another
Copy - copy the file from one diskette to another or to the same diskette
Format - Prepare a diskette for use by the microcomputer
Kill - Delete a file from a diskette
Rename - Change the name of a file
Directory - Look at all the files on a diskette
Free - See how many free spaces are available on a diskette

The Directory

It is convenient, and often necessary to see what is on each of the diskettes that have been used. A directory is provided to tell the user what is on each diskette. Check your microcomputer to determine how to get this information.

Compressing a Document

Each document that has been typed has been entered on a diskette and stored as a "file". The more files that are created, the more necessity there will be to organize or manage those files in order to conserve space on diskettes. Files can be copied to another diskette having similar information or they may be deleted if they are no longer needed. In order to get as much information on a diskette as possible, many word processing programs permit the compressing of documents. When this is possible, a file is rewritten to a new file using the least possible amount of space. Both files remain on the diskette, so it is important that there is enough space on the diskette for both files. When the compression operation is finished, the old file can be deleted to permit more room on the diskette.

If the word processor being used has the capabilities to compress files, compress the documents that have been created. When the compressing process is finished. Display the directory and note the different amount of space (granules) the old and new file took. Kill the old file and rename the new one to coincide in with the document contents and the contents of file on the diskette. Always use a data diskette and not a program diskette to store files. Data diskettes have more space on them for files since the program diskette has the entire word processing program on it. When finished with a document, copy the document to a data diskette and "kill" the document on the program diskette. Check the reference manual to see how to do this. Always backup the data diskette so if a document is accidentally lost a copy will be available.

Notes:

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Chapter IV

STUDENT'S RESOURCE GUIDE

FILE MANAGEMENT FOR CHILD CARE ADMINISTRATORS

****

TABLE OF CONTENTS

Chapter IV - File Management for Child Care Administrators
Student's Resource Guide

Introduction - Purposes - Procedures - Materials - Suggestions..Stu-IV- 1

1. Pretest..Stu-IV- 3

2. An Introduction to File Management on the Microcomputer (LE2)..........................Stu-IV- 6

3. Application of File Management to the Child Care Situation (LE3)..........................Stu-IV- 9

4. Using the File Management Program (LE4)............Stu-IV-11

5. Create a Data Base of Children and Run Reports (Reports) (LE5)........................Stu-IV-13

6. Create a Data Base of Staff and Run Reports (LE6)....................................Stu-IV-15

7. Merge File Management and Word Processing Documents..........................Stu-IV-17

Chapter IV - File Management

****

Purpose:

The purpose of this chapter is to teach the utilization of a file management (data base management) program on the microcomputer to child care administration personnel. Included:

- Introduction to file management
- Pretest for file management
- Uses of file management for child care administrators
- Learning experiences to utilize file management in the child care setting.

Child care administrators will use the microcomputer file management program available to them in completing learning experiences in this text. It will be necessary for the child care administrator to have available a copy of the software and the reference manual for the specific microcomputer being used in order to complete the requirements for the learning experiences. (Specific instructions for using the microcomputer used in the pilot project -Radio Shack Profile III Plus- are included in the the instructor's manual.)

Objectives:

After completion of this chapter, it is expected that the student will be able to:

1. Tell what a file management or data base management program is and how it can be used by the child care administrator.

2. Tell how file management can be used in the student's individual child day care situation.

3. Use the file management system to create a data base of information on children and their parents/guardians. Print lists of children meeting criteria as requested by the instructor.

4. Use the file management system to create a data base for staff, including demographic data as well as education, certification and health data. Print lists of staff meeting criteria as requested by the instructor.

5. Merge a data base file with a form letter created in the word processing program. Send the form letter to parents of children in the center, using the file management program to make the labels.

NOTES:

Learning Experience 1

Pretest on File Management Using the Microcomputer

****

The student will:

Complete the pretest on file management on the following page. If you don't know an answer, please indicate by saying "I don't know." It is okey to gess on this pretest. At the end of this topic, you may be asked to take this test again to see what you have learned.

****

NOTES:

Pre Test - File Management

Name ________________________________

1. What are the major functions of a file management or data ase management system?

2. What are the names of some of the "file management" systems available for microcomputers?

____

____

____

____

3. Indicate a (Yes) or (No) opposite each of the following to indicate if you believe it is a normal feature of a microcomputer file management system:

_______ Data base divided into segments

_______ 90 or more fields in each record

_______ 5 or more screen formats

_______ 5 or more report formats

_______ 5 or more label formats

_______ Stores unlimited number of records

_______ Allows creation of user menus

_______ Allows high speed access to records by use of index files

_______ Permits clustering of assorted fields into search groups

_______ Performs addition, subtraction, multiplication and division

_______ Performs "mass" operations for selected records

_______ Password protect screens and formats

________ Limits access and security

________ Interfaces with a "word processing" system

________ Interfaces with a "spreadsheet" system

________ Supports "user view" of data base

4. To operate Profile III Plus one must use a ____________ diskette and a _____________ diskette and if the data base is large a ____________ diskette is advisable.

5. In naming a "file" or "data base" in Profile III Plus the maximum number of characters permitted is __________.

NOTES:

Learning Experience 2

An Introduction to File Management on the Microcomputer

****

The student will:

1. Read the introductory material in this learning experience and the reference manual from the file management program being used and be prepared to take part in a class discussion regarding the utilization of file management in the child care setting.
2. Read the supplementary readings as assigned.

****

Introduction

File Management, or data base management as it is sometimes called, is an important element of child care center administration. A data base, of a file of homogeneous records pertaining to the children and staff can be created in the microcomputer, much as one would create a card file on this material. Data is input via the microcomputer keyboard and stored on diskettes for future use. This stored data may be updated and manipulated using the functions of the microcomputer and the file management software. The most important and dramatic function of a file management system is the ability to retrieve data quickly and selectively. Unlike the card file, where one must thumb through many cards to find the information needed, a file management system permits the user to define the information desired and have the microcomputer produce it quickly either on the screen of the microcomputer or as a hard copy report.

File management transforms a microcomputer into an organized filing system, and permits the manipulation of the data that has been entered. Almost any type of information can be stored in the system, and retrieved at a touch of the correct keys. File Management systems permit the user to customize the data base to fit individual needs. File segments can be set up to contain individual records, fields chosen for "searching" through the records and reports constructed automatically.

Conventional filing system can only be set up in one order--for example, in alphabetical or numerical order. With a good file management system, data can be indexed or filed using many different criteria. By creating different screen layouts for data bases, the data can be displayed in several ways.

Many file management systems will perform addition, subtraction, multiplication, and division, allowing records to be kept containing dollar amounts or other totals and to up date them easily. In some cases recalculations can be done automatically. Once records have been recorded in a data base, they can be used to print reports and make mailing labels. If the data base being used has the capability to merge with other programs for the microcomputer, a form letter can be prepared on word processing and merged with personalized information form the data base files.

According to Consumer Reports in their extensive coverage of microcomputers: "Filing is such an important business use of computers that the file room has been renamed the office of "data base management. At home, you may not have much use for filing, much less data-base management. A box of three-by-five cards would last many families for a lifetime. If you are a collector--stamps, coins, antiques, recordings, matchbook covers--you may want a file, and if you have a microcomputer, you can have a beauty. You might, for instance, have a list of your phonograph records electronically cross-indexed under composer, orchestra, conductor, soloist, year of recording, and anything else you can think of."

"Programs for the sort of filing you might do at home are relatively inexpensive, and available for any microcomputer. The only thing you must be sure of is having enough data-storage capacity if the file is to be extensive. If you use the file frequently, you'd also be happier with disk storage rather than tape." (Consumer Reports, 1983)

In a business, such as a child care, a more extensive program might be needed. When a purchasing a data base for a microcomputer, it is extremely important that questions be asked regarding what the system will do and match them with the needs that will exist in the situation.

NOTES:

Learning Experience 3

Application of File Management System to the Child Care Setting

****

The student will:

1. Read the following material on the utilization of a file management system with a microcomputer and be prepared to discuss it in class.
2. Study the list of possible applications included in Learning Experience 3 and make a list of ways a file management system could be used in the child care setting.

****

By carefully choosing your computer, printer, and mailing list program, it is possible to write personal letters to everyone or to some defined group in your electronic data file. Consider the impact this might have on membership renewals, fund-raising appears, or calls to action on legislative wing list includes the general things a file management system can do.

Depending on the file management system available it could do all or some of the following:

1. Store records and permit quick access to individual records or groups of records.
2. Produce different types of reports based on individual records.
3. Print different types of mailing labels for each data base.
4. Perform arithmetic calculations such as additions, subtraction, multiplication and division.

5. Perform recalculation, make hardcopy, delete and merge materials from different programs.

6. Merge form letters with mailing lists.

After reading the applications listed here and studying the reference manual with the microcomputer being used, think of ways child care facilities in general can utilize file management in their day-to-day operation. Make a list and be prepared to brainstorm regarding the application of a file management system to child care administrators.

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NOTES:

Learning Experience 4

Using the File Management Program

****

The student will:

1. Read the handouts and/or reference manual with regard to the file management or data base being used and be prepared to discuss the materials in class.

2. Review your own child care center operations and decide on 5 or 6 "data bases" of homogeneous information that you believe would be beneficial to maintain in a microcomputer. List the name of each one and briefly describe:

   A. Why is it important?

   B. How it would be used?

   C. What kind of information would you want from the data base?

3. For each "data base" listed above, prepare a list of the "fields" (data elements) of information that you believe should be in that data base and indicate how many "characters" long each field should be.

4. Some "fields" are "key fields" on which you would want to "sort" records to obtain needed information and other fields are information fields only to be printed out or displayed with the key fields. Indicate on each list of data elements prepared above, those data elements or fields you consider "key" by placing an asterisk (*) before those fields.

5. Turn responses to questions 2, 3 and 4 in for checking at the beginning of the next class.

NOTES:

1. This learning experience is important to the understanding of the remainder of file management. Return to the reference manual or handouts and review the material on fields, key fields, sorting and on which fields sorting can be done in the file management program being used. It is very important that this is understood before proceeding to the next learning experience.

2. It is suggested that the student go back and review this section before proceeding to the next learning experience.

Learning Experience 5

Create a Data Base of Children and Run Reports

****

The student will:

1. Use the file management program to create a data base of children.

2. Make a hard copy of the data base.

3. Expand file and add 5 new children to the data base.

4. Run a report of the address list by zip code of the children in the four-year-old-class. (Hint: Can this be done? Why? Why not?)

5. Design a new report from the children data base. Content of this report will be of student's own choice. Report should have "Title, Date and Page Number" in addition to actual data. Also use "Record Number" in the report format. Possible reports include:

   Monthly Immunization List
   Birthday List
   Address List by Zip Code
   Emergency Contact List

6. Run the report. Prepare a hardcopy printout of both the format and the actual report. Bring these to class for discussion and checking.

****

Procedure:

1. Review Learning Experience 4:

A list of fields was created and the number of spaces needed for each field was determined. "Key fields" for sorting purposes were established. This material was checked for accuracy by the student and instructor. Double check the fields for sorting.

2. Study the reference manual for the file management program being used (or handouts from instructor). It is important that the student understand how to use the file management program for the microcomputer being used. This will require careful study of the reference manual and/or handouts with regard to the specific program.

3. Enter the file management program being used by keying in the appropriate command to the microcomputer. Going through the steps as part of a lab experience in class will help in learning the technique.

4. Create a data a base for children by imputing the data on the children being used for this experience. Beginning in the lab, under supervision, is suggested. The child care administrator can use one of the the following: (Choice is at the discretion of the instructor)*

A. Use data from the administrator's child care setting. If this procedure is used, records containing the information with regard to children will be needed. (A sample of necessary records is included in the instructor's manual)

B. Use the data base provided with the pilot program and found on the master diskettes available with this program. (40 records are included)

5. Run reports using the data in the data base as assigned.

NOTES:

*Time required of this learning experience will be dependent upon the data that is being used.

Learning Experience 6

Create a Data Base of Staff and Run Reports

****

The student will:

1. Use the file management program to create a data base of staff.
2. Make a hard copy of the data base.
3. Add 4 new employees to the data base.
4. Terminate 2 of the employees.
5. Make a hardcopy of their records after termination.
6. Prepare a report from staff records including:
   A. Last name
   B. Job Title
   C. Next Evaluation
   D. Training Hours Completed
7. Print out report and bring to class for discussion and checking

****

Procedure:

1. This learning experience involves practice in applying what was learned in Learning Experience 5.

2. Review the steps used in creating the "Children" data base.

3. Create a data base of staff. The child care administrator can use one of the the following: (At the discretion of the instructor)*

A. Use data from the administrator's child care setting. If this procedure is used, records containing the information with regard to staff will be needed.

3. Use the data base provided with the pilot program and found on the master diskettes available with this program. (12 records are included).

4. Print out reports as assigned.

NOTES:

*Time required of this learning experience will be dependent upon the data that is being used.

Learning Experience 7

Merge File Management and Word Processing Documents

****

The student will:

1. Prepare a form letter using the sample provided.
2. Merge the letter with the "Children" data base.

****

Many microcomputers have the capability of merging one program with another. The student needs to check the programs being used to determine if this capability exists. If the microcomputer has the capability:

A. A letter can be prepared using the word processing program.

B. A data base can be prepared using file management

C. The two can be merged, sending the letter to all or a selected number of the names.

Procedure:

1. Carefully follow the instructions in the file management program and word processing program being used to merge a letter with a list of parents and guardians.
2. Precise input is necessary in preparing the form letter.
3. Select the parents to receive the letter.
4. Type labels for those parents selected using the file management program if it has this capability.* If the file management program being used does not have label making capabilities, type envelopes for at least two of the letters using the procedure learned in word processing.

NOTES:

1. *Supplementary activity to enhance learning. This actiivity was not included in pilot program because of time constraints, but is a suggested procedure.

2. It is suggested that the student take the pretest as a post test to evaluate learning.

3. A final project might entail putting the records from the center where the student is working on the a data base and completing one or more form of the students.

****

CHAPTER V

STUDENT'S RESOURCE GUIDE

USING THE ELECTRONIC SPREADSHEET FOR CHILD CARE ADMINISTRATIVE TASKS

****

TABLE OF CONTENTS

Chapter V. - Using the Electronic Spreadsheet for Child
Care Administrative Tasks - Bill Shinder
Student's Resource Guide

Purpose and Objectives of the Chapter........................Stu-V- 1

1. Pretest on the Electronic Spreadsheet...................Stu-V- 3

2. An Introduction to the Electronic Spreadsheet...........Stu-V- 5

3. The Electronic Spreadsheet: How it Works................Stu-V- 9

4. Entering Data on the Electronic Spreadsheet.............Stu-V-17

5. Adjusting Column Widths.................................Stu-V-32

6. Understanding the Storage Command.......................Stu-V-35

7. Developing a Budget and Manipulating the Window Display..Stu-V-39

8. Printing from the Electronic Spreadsheet................Stu-V-47

9. Menu Planning on the Electronic Spreadsheet.............Stu-V-51

Chapter V

****

Using the Electronic Spreadsheet for Child Care Administrative Tasks

Purpose:

The purpose of this chapter is to teach the use of the electronic spreadsheet program and to indicate some of the major uses of this software package for child care administrators. The students will be expected to use the electronic spreadsheet program available to them in completing the learning experiences in this text.

Instructions specific to the microcomputer used in the research project are included in the teacher's manual (VISICALC PROGRAM by Software Arts, Inc. for the Radio Shack TRS-80 Model III and 4).

Objectives

After the completion of this chapter it is expected that the student will:

1. Tell what a spreadsheet is and explain how an electronic spreadsheet can be used by a child care administrator.
2. Explain how the electronic spreadsheet can be used in the individual's own child care situation.
3. Explain the terminology used on the electronic spreadsheet in general and the terminology specific to the spreadsheet program for the particular microcomputer being used by the student.

4. Demonstrate the ability to use a microcomputer to complete the learning experiences contained in the student worktext.
5. Develop a plan to effectively use the electronic spreadsheet program in one's own child care situation including training appropriate staff in the use of this program.

Learning Experience 1

Pretest on the Electronic Spreadsheet

****

The student will:

Answer the following questions before studying the material in this chapter. If you do not know the answer simply write "don't know." Please use ink.

****

1. Explain in your own words what is meant by the term "spreadsheet."

2. List and explain the advantages of an electronic spreadsheet over the "old fashioned" paper and pencil method.

3. When purchasing a microcomputer why would you want to first compare spreadsheet programs?

4. List and explain the WINDOW commands for a spreadsheet program.

5. How are column widths adjusted on an electronic spreadsheet?

6. What steps are necessary to format the screen display?

7. How can titles be fixed for both rows and columns on the electronic spreadsheet?

8. What administrative tasks at your own center can be more easily handled by using an electronic spreadsheet?

Learning Experience 2

An Introduction to the Electronic Spreadsheet

****

The student will:

1. Read the following material regarding the use of the electronic spreadsheet and be prepared to discuss it is class.
2. Use the supplementary reading list to increase one's knowledge of the electronic spreadsheet and its business applications for a child care center.

****

Introduction

The term "spreadsheet" comes from the field of accounting. It is nothing more than the large sheet of paper used by bookkeepers and accountants to do financial planning. The spreadsheet is actually a financial modeling tool. The electronic spreadsheet replaces the accountant's columnar pad, pencil, and calculator. Thus, in some ways, the electronic spreadsheet program is to these basic accountancy tools what the word processing program is to the typewriter.

The electronic spreadsheet program looks very much like the old columnar pad, but it is much larger--too large to see but a small portion of it on the viewscreen at any one time. While the spreadsheet makes it dramatically easier to create, edit, and use financial models, there are many other uses of the electronic spreadsheet as far as the child care administrator is concerned. What an electronic spreadsheet can do is limited only by the built-in parameters of the program and the creativeness of the user.

The electronic spreadsheet, like its paper counterpart, consists of a series of rows and columns. Typically, there are 254 rows and 63 columns. This means that a fully utilized electronic spreadsheet, even in its simpliest form contains 16,002 entry positions (there are more advanced, complex forms available that would probably not be needed by the usual child care facility.) What this means for the user is that even the more simplier versions of the electronic spreadsheet contain enough useable memory for the necessary applications needed by the child care administrator.

The History of Electronic Spreadsheets

VisiCalc was the first spreadsheet for microcomputers. This software program was introduced in 1978. VisiCalc has become the most popular computer program of all time. Like so many inventions, the Visicalc program was developed because one person was frustrated with the usual way of doing a task. In 1978, Robert Frankston was a student at Harvard Business School in Cambridge, Massachusetts. He was frustrated by the tedious task of analyzing business cases--three a night for five nights a week. Much of his analysis involved the preparation of intricate, extensive financial analysis. Frankston joined with his friend, Dan Bricklin, who was a computer programmer. Together they formed the Software Arts Company and began to develop the very first electronic spreadsheet. A third student, Dan Fylstra, obtained the rights to market the product and founded a company now called VisiCorp, after the company's most famous program. That very same year, in 1978, the program was offered to the public.

Not too long before the VisiCalc program was offered to the public, the Apple II microcomputer became available. (Just for your general information, the Apple I microcomputer was introduced in kit form. Very few Apple I microcomputers were sold; actually only about 500 of them!) With a user-friendly microcomputer--one you did not have to put together yourself--and the electronic spreadsheet program, the microcomputer became for the first time a truely useable small business tool. Here, then, was a legitimate business use for the desktop microcomputer. This is not to take anything away from the microcomputer as a word processor, but sophisticated typewriters can do much of what the simplier word processing programs can do. Considering the basic cost of a microcomputer, it is important that it be able to do more than just replace the typewriter; it must truly be a business management tool. And that is what the electronic spreadsheet is all about.

There are a variety of advantages to the electronic spreadsheet, even over the financial analysis programs that were first available for the mainframe computers. First of all, the electronic spreadsheet is a visible calculator (hence, the name of the first such software program--VisiCalc). The model allows one to enter data and assumptions (mathematical formulas as well as logic statements that would be "if...then...else" logic (also known as Boolean functions).

The electronic spreadsheet has many uses in child care administration. This chapter will only cover a very few of them. To be covered in this chapter will be the use of the electronic spreadsheet for Proposed and Actual Budget manipulations and Menu Planning. As the student becomes familiar with the electronic spreadsheet program, numerous other uses will also occur.

Learning Experience 3

The Electronic Spreadsheet: How it Works

****

Purpose:

The purpose of this learning experience is to assist the student to develop the knowledge and skills to begin using an electronic spreadsheet. The student will use the microcomputer and software spreadsheet program available. The instructor will provide the appropriate handouts to allow completion of the learning experience.

Objectives:

After completion of this learning experience, the student will:

1. Identify the steps necessary to set up the equipment for use with an electronic spreadsheet program.
2. Review the procedures necessary to BACKUP a program diskette and FORMAT a blank diskette to use as a data diskette.
3. Identify the parts of the electronic spreadsheet screen and tell what each part is for.
4. Demonstrate the ability to move the highlight cursor from one cell to another either by scrolling or by use of the GO TO command.

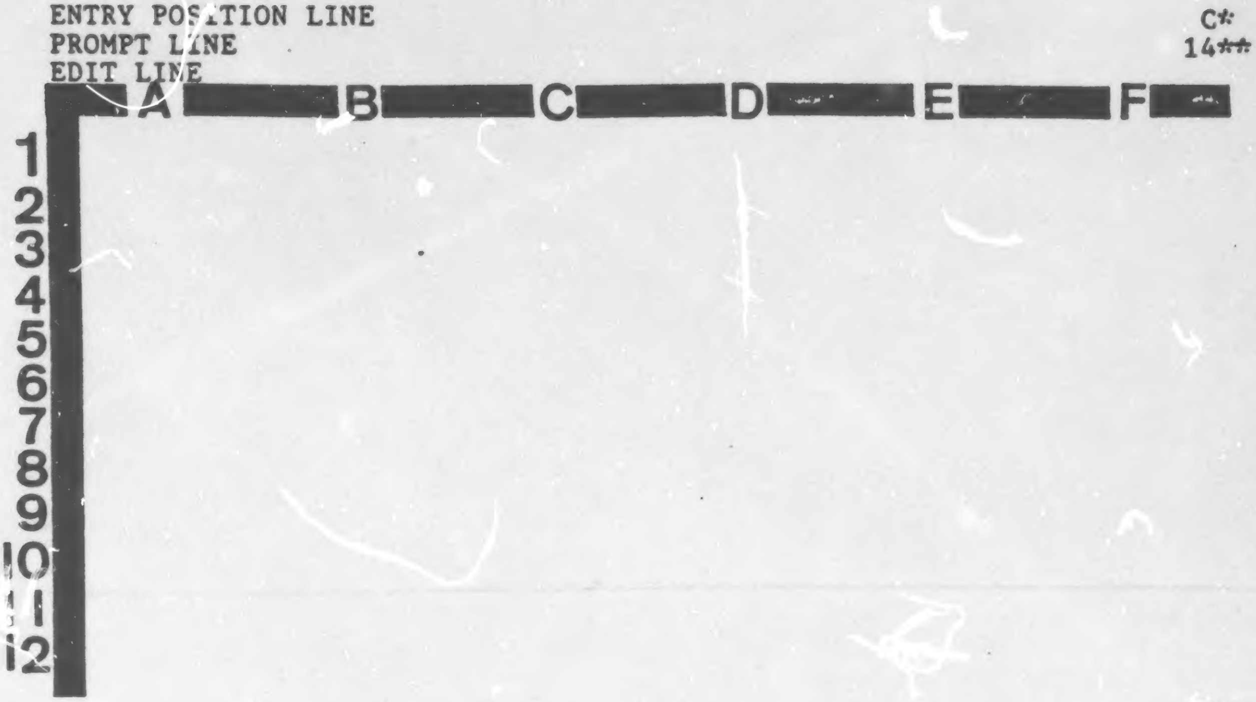
The Basic Electronic Spreadsheet

Figure 1 provides a representation of the electronic spreadsheet.The one shown here is from the VisiCalc program, but most spreadsheets will look much the same. The first three lines of the screen make up the control panel. Following is a short explanation of each of these lines:

1. The entry contents line: This is the top line on the screen and will always show right where the cursor is placed. When the program is first loaded into the microcomputer, the position or coordinate label "A1" will appear on the entry contents line.
2. The prompt line: This is the middle line on the control panel. On the left will appear the name of the command that is currently being displayed. This prompt name will be followed by a series of alphabet letters preceeded by a colon. Each letter stands for a choice offered by the program at that point. The control panel is said to be "clear" when there is no prompt on this line.
3. The edit line: The third line of the control panel will display each character one types or points to with the highlight cursor.

Just below the control panel is the WINDOW of the electronic spreadsheet. Remember that the spreadsheet is much, much too large to see but a portion of it at any one time. The window looks on a portion of the entire spreadsheet. Across the top of the window is a border interspersed with alphabet letters. Each letter is a column heading. In the VisiCalc version of the electronic spreadsheet there are a total of 63 columns labeled A,B,C,...all the way to BI,BJ,BK. Down the left side of the window is a border of numbers. These numbers serve as headings for each of the rows.

THE BASIC ELECTRONIC SPREADSHEET


ENTRY POSITION LINE
PROMPT LINE
EDIT LINE
C*
14**
A
B
C
D
E
F
1
2
3
4
5
6
7
8
9
10
11
12

*Recalculation Order Indicator
**Memory Indicator

Figure 1

The intersection of each column and row defines an ENTRY POSITION. For example, on Figure 1, mark the entry position B4. The place identified--B4- is called the ENTRY POSITION COORDINATE, or simply the coordinate.

When the electronic spreadsheet program is properly loaded into the microcomputer, then one can see a set of flashing brackets that highlight the first entry coordinate, A1. This flashing bar is called the HIGHLIGHT CURSOR, or simply the cursor. When information is entered into the program it will appear inside the flashing cursor.

System Setup for Using an Electronic Spreadsheet

To use an electronic spreadsheet program one needs the following:

- A microcomputer will 48K of RAM and two disk drives.
- An electronic spreadsheet program compatible with the microcomputer being used. The instructor may ask you to make a backup of the program diskette.
- A blank diskette for data storage if one is not provided by the instructor. Remember to format the blank diskette so that it will work with the microcomputer being used.
- A printer is also necessary if hard copies of the data are to be made.
- Follow the instructions provided by the instructor for loading the program into the microcomputer.

Viewing the Electronic Spreadsheet

The viewscreen displayed after loading the electronic spreadsheet program should look similar to that in Figure 1. The viewscreen has now become a window into the microcomputer's memory. Remember that you are only viewing a small portion of the entire electronic spreadsheet.

Now, look at the coordinate on the screen where column A and row 1 intersect. This is coordinate A1. Notice that the program prints this coordinate on the upper line of the top border of the sheet. Look down to this coordinate position within the spreadsheet. There should be a set of flashing brackets which are highlighting the coordinate A1. This set of brackets is highlighting the entry position and is called the highlight or cursor. One always writes on the electronic spreadsheet at the coordinate position marked by the cursor. Think of it as the point where a pencil would be on a piece of paper. This cursor can be moved in one of four directions: up, down, to the right or to the left. List below the user keys needed to move the cursor accordingly:

* To move the cursor to the right: ____________________
* To move the cursor to the left: ____________________
* To move the cursor down the page: ________________
* To move the cursor up the page: ____________________

Now practice moving the cursor around the entire electronic spreadsheet. Move the cursor to the following coordinates: F5, C12, D7. Move the cursor to L9. Notice that the "window" now shows a different set of columns at the top of the spreadsheet. Move the cursor to K56.

Again, a new "window" appears because the cursor has moved down the spreadsheet to row 56 which could not be viewed on the original window that first appeared when the program came up on the screen.

There is an easier way to move the cursor than by scrolling which was what was done in the exercise above. That is by use of the GO TO command. List in the space provided the user key which allows one to obtain the message GO TO on the prompt line:__________. Make sure that the cursor is at the coordinate A1. Next type in the coordinate BK254. This is the very last coordinate on the electronic spreadsheet for the less sophisticated programs. Now press the ENTER key and notice what happens. The highlight cursor rapidly moved to the position BK254. What you have done is to use the prompt line and the edit line to move the cursor without having to scroll throughout the entire spreadsheet to find a distant coordinate. Practice this skill until you can easily move the cursor around the spreadsheet either by scrolling or by using the prompt line command GO TO. If, by chance, a wrong key is hit and either the word "Value" or "Label" appears on the second line of the control panel, do not panic. Just find the user key for the BREAK command and the unwanted word will disappear . Then you can return to the exercise of becoming familiar with moving the cursor.

Besides scrolling within the window that one is using, it is also possible to scroll throughout the entire electronic spreadsheet. Merely hold down the user key which allows one to move the cursor to the right. What happens? The cursor moves to the right as long as one holds down this key until the very end of the spreadsheet is reached. The other user keys can also be used to scroll in their various directions.

What happens if coordinate data is entered that is nonexistent? Press the user key for the GO TO command. Now enter the coordinate position AD489. Write down in the space provided what happened and how this is useful to you:

Learning Experience 4

Entering Data on the Electronic Spreadsheet

****

Purpose

The purpose of this learning experience is to assist the student to become familiar with entering data onto the electronic spreadsheet. The instructor will provide handouts specific to the microcomputer and software being used by the student.

Objectives: After completing this learning experience, the student will be able to:

1. Enter labels on the electronic spreadsheet.
2. Enter values on the electronic spreadsheet.
3. Enter formulas on the electronic spreadsheet.
4. Develop skill in correcting errors in data entry.
5. Develop skill to replicate formulas, labels, numbers, etc. across rows and down columns.

****

So far, the electronic spreadsheet has remained empty while skill was developed in becoming familar with the viewscreen and moving the cursor around the window as well as the entire spreadsheet. Now it is time to enter data onto the spreadsheet.

It is important to always begin with a clear spreadsheet. In the space below write in the command sequence that will allow one to make sure that the sheet is clear and that the cursor is in position A1:

____

The command sequence allows one to clear the spreadsheet, but it also asks whether or not one wants to clear the sheet. The program is written to provide the necessary prompts to prevent the user from loosing data already entered onto the spreadsheet. With the highlight cursor at position A1, type in capitals the word SALES. Stop and look at the screen. What word has appeared on the prompt line?

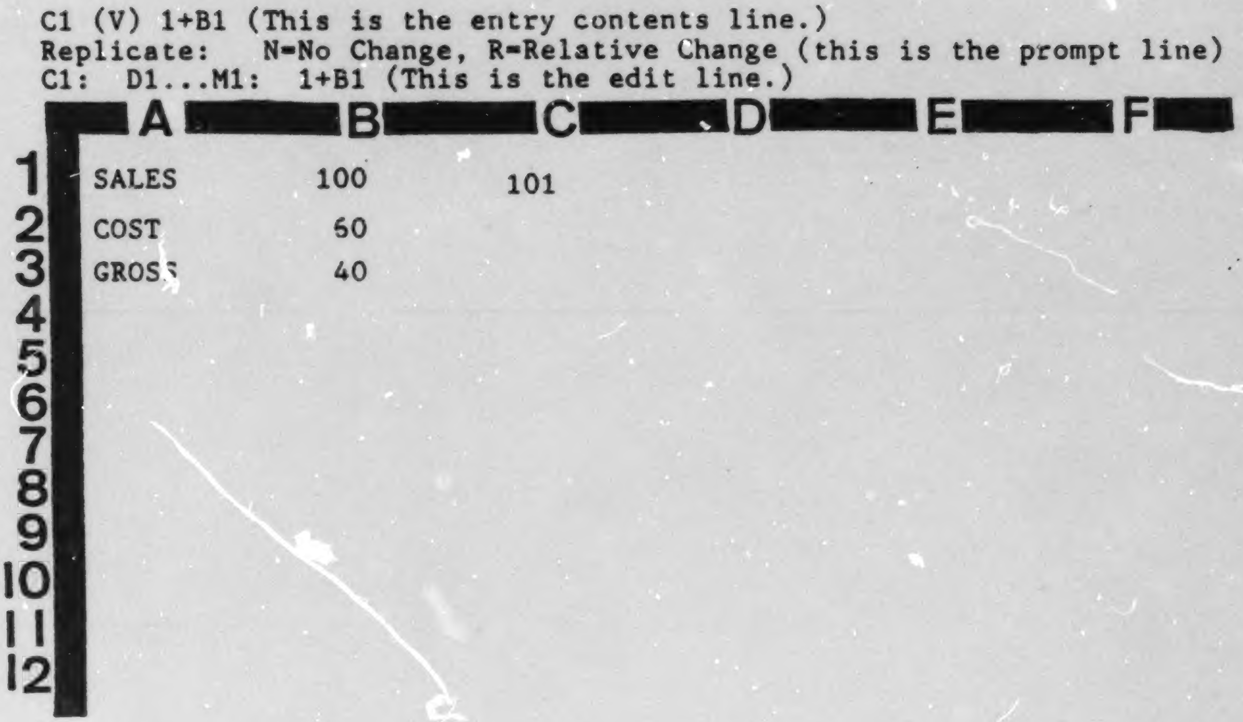
____

This word indicates that an alphanumeric message has been entered into the program which will not be used in calculations. Note also that the word typed into the program, SALES, appears on the edit line, followed by the edit cursor. The edit cursor indicates that one can still use the edit line to backup and correct any mistakes or to erase the data entered. The instructor will provide the student with a handout for the commands used to backup the edit cursor or clear the entry for the software program being used. Study this handout now so that any errors in typing can be corrected before information is actually entered onto the electronic spreadsheet itself.

If the word SALES appears correctly on the edit line, then it is now time to enter this word onto the electronic spreadsheet. What user key is used to enter information onto the electronic spreadsheet? Write that key in the space provided:__________________. When the appropriate key is pressed to enter information onto the spreadsheet, then the information on the edit line and prompt line disappears and the cursor moves to coordinate B1.

Suppose that as the director of a child care center you have published a small book of activities for parents to do at home with their children. Your first month's sales were $100. Now type in the sales amount of 100 (since this is a dollar value, it is not necessary to type in the symbol "$"). What word apprears on the prompt line? Write that word in the following space: ________________. This word is the one used by the electronic spreadsheet to indicate that a number or formula has been entered into the program. On the edit line is the number "100" which is followed by the edit cursor. Notice again that nothing has appeared on the spreadsheet itself. Everything has been happening on the edit line. If the correct information appears on the edit line then press the key used to enter the information on the spreadsheet. Write down exactly what happened on the screen:

THE BASIC ELECTRONIC SPREADSHEET



```
C1 (V) 1+B1 (This is the entry contents line.)
Replicate:   N=No Change, R=Relative Change (this is the prompt line)
C1:  D1...M1:  1+B1 (This is the edit line.)
```

	A	B	C	D	E	F
1	SALES	100	101			
2	COST	60				
3	GROSS	40				
4						
5						
6						
7						
8						
9						
10						
11						
12						

Figure 1

Several things should have been noted when the key to enter information was pressed. The prompt line and edit line disappeared and the number 100 appeared on position B1. The top of the screen should now read something like B1 (V) 100. This is the ENTRY CONTENTS LINE. It gives a full explanation of the contents written in the entry position highlighted by the cursor.

The entry content line gives three types of information:

1. The coordinate position of the information
2. An indication of whether the information is a label or a value
3. The information statement itself.

Move the cursor to the coordinate A1. Note the information that appears on the entry contents line for this coordinate.

Now move the cursor to position A2 and type in the word COST in capitals. Press the key which will move the cursor to position B2. Notice that the word COST appeared on the spreadsheet at position A2 while the cursor moved to position B2.

Suppose that the COST of producing the parent manual is to be 60% of the amount for SALES. Now it is time to enter a "formula".

In order to enter a formula it is necessary to use the keys which indicate the basic arithematic functions of addition, subtraction, multiplication and division. In the space provided below, indicate which user keys are used for the following functions:

Addition: ____________________

Subtraction: ________________

Multiplication: ____________

Division: __________________

In the example provided, the "*" symbol is used to indicate multiplication. Now enter the formula .6*B1. This information should now appear on the edit line. If it does not, then use the CLEAR command and type in the correct information. On the entry contents line something like B2 (V) .6*B1 should appear which means that at position B2 on the spreadsheet will appear the result of multiplying the number at B1 (which was 100) by .6 or 60 percent. Now press the enter key and the result of this formula will appear on the spreadsheet. Sixty percent of 100 is 60; this number should now appear on the spreadsheet.

Move the cursor back to position B1. Change the amount of SALES by entering the value 200. Write down what happened to the screen:

____

____

____

____

____

The number in the cursor changed from 100 to 200. Because a formula was entered in B2 which used the number in B1, the number opposite COST also changed. Sixty percent of SALES, which is now 200, changes the COST to 120. The COST remains 60 percent of SALES.

Move the cursor to B2 and note that the formula is still there. Now, however, the electronic spreadsheet uses the new information for SALES so that the formula .6*B1 becomes "60% of 200."

Move the cursor to coordinate A3 and enter the word GROSS in capitals. The gross profit from the sales is expressed by the formula "sales minus cost." On the electronic spreadsheet, this would be represented by B1-B2. But remember, when an entry begins with an alphabet letter, then the programs accepts it as a label and not a value for calculation. In order to get the program to accept the formula "B1-B2" it is necessary to begin with something other than an alphabet letter. With the cursor at coordinate B3, type in the formula +B1-B2. Because a symbol other than an alphabet letter started the formula, the program now will accept this information. If the information on the edit line is the correct formula enter it into the program. What happened? The difference between SALES and COST now appeared at coordinate B3. The number should be 80.

For further practice at this point change SALES to 600 dollars. What happened to the rest of the screen? ______________________________

____

____

____

____

Now change the formula at B2 to be 40 percent of B1. What happened to the screen? ____

____

____

____

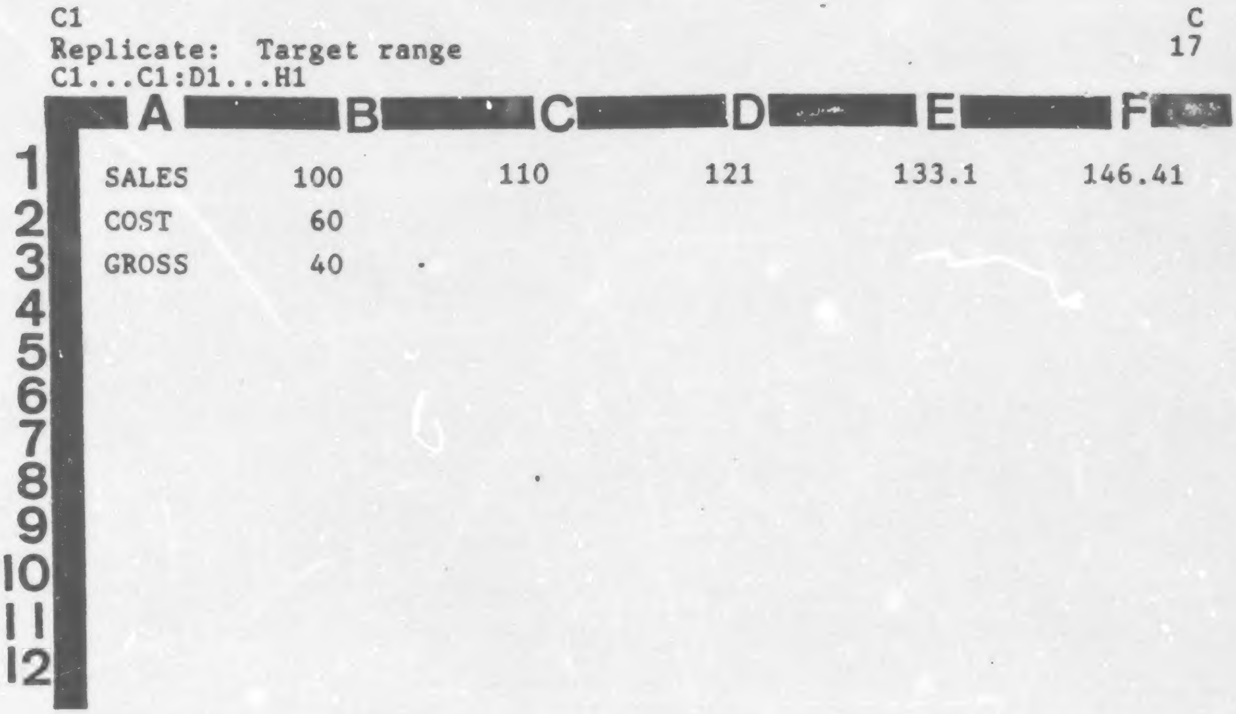
Remember that up to now, the spreadsheet program would call anything starting with an alphabet letter a "label" and anything starting with any other symbol a "value." But suppose that one wishes to begin a label with a symbol other than a a letter of the alphabet. This is possible if the correct user key is pressed before beginning to enter the information. Suppose that instead of GROSS for the label at the coordinate A3 one wishes to use -GROSS-. Each electronic spreadsheet program has a user key that allows one to begin a label with a symbol other than a letter of the alphabet. Check with your instructor or the program manual to discover which user key will allow one to begin a label with a symbol other than an alphabet letter. Enter the user key description here: ___________. Now put the cursor on coordinate A3 and change the label GROSS to -GROSS-.

Replicating Formulas

Look at Figure 2 and correct the spreadsheet screen to duplicate the one pictured there. This screen shows sales, cost and gross profits for only one month. (That is, only one time period is shown. It could be a quarterly statement or a year.) Suppose one wants to project those figures for an entire year. Further suppose that profits are expected to increase by ten percent a month. Press the correct user key to move the highlight cursor to C1. Type in the formula 1.1*B1. This formula means that in C1 will appear the sales for the first month plus ten percent of that amount. Check the edit prompt line to make sure that the formula has been correctly typed. Enter the formula into the spreadsheet. The number 110 appears at coordinate C1 on the spreadsheet.

THE BASIC ELECTRONIC SPREADSHEET

REPLICATING A FORMULA



C1
Replicate: Target range
C1...C1:D1...H1

C
17

	A	B	C	D	E	F
1	SALES	100	110	121	133.1	146.41
2	COST	60				
3	GROSS	40				
4						
5						
6						
7						
8						
9						
10						
11						
12						

Figure 3

Now suppose that one expects profits to increase by ten percent for each of the next ten months. One could enter a formula at coordinate D1 that reads 1.1*D1. However, then a separate formula would have to be created for each of the next ten months. Too time consuming! A better way would be to REPLICATE the formula and that is what is to be done next.

Put the cursor on the coordinate C1. Next one needs to get the replicate command to appear on the prompt line. Check with your instructor or the electronic spreadsheet program manual to learn which command sequence will call up the "replicate" command. For the VisiCalc Program the slash mark or "/" is the user key that will bring up a sting of capital letters on the prompt line. By next pressing the "R",the prompt line will appear which shows the following: Replicate: Source range or ENTER. On the edit line is the coordinate which has the cursor, the C1 position followed by a dash. Press the key to ENTER the source as C1 (the source is always where the cursor is placed.) Now the prompt line should read Replicate: Target range. The edit line should now indicate the following: C1...C1:. This statement indicates that the formula is to be replicated only for coordinate C1. One needs to enter a target range. Since, in this case, the formula is to be spread over a twelve month period, what column will indicate the twelfth month?

Write here the coordinate which will end the target range: ____________

____

If calculations were correct, then the correct target range coordinate was noted in the space above. The appropriate end for the target range is M1. Check the spreadsheet screen to note that M1 marks off twelve months. Now enter M1 by moving the cursor to that position. Look to see that the edit line now reads C1...M1. The cursor has jumped back to the source coordinate which is C1, but the prompt line has changed. What does the prompt line now read: __________________________

____

The prompt line now should indicate something like this: Replicate: N=No Change, R=Relative. By pressing "N" one gets the exact formula replicated and B1 remains a constant of 100. But this would not show that sales have increased by ten percent each month. So, what is needed here is a "relative" change. This means that the formula for D1 would use 110*1.1. This would then give the figure 133.10. Thus, the coordinate B1 is relative to the position of the formula. The computer has been told the following: Take the last sales figure and increase it by ten percent. If the formula was entered with "no change", then for each month the 100 would have been a constant. Since what is wanted is for the sales to increase by ten percent each month, the formulas across the range would read: 1.1*B1, 1.1*C1, 1.1*D1...1.1*M1.

The source range and target range have been properly entered into the program. The prompt line asks for either no change or a relativ change in the formula. Press the appropriate key to get the relative formula. Watch the screen carefully. Describe what has happened in the space provided below: ______________________________

____

____

____

____

____

Put the cursor on the coordinate C1 and note the formula that appears on the entry contents line. Slowly move the cursor through all the coordinates from D1 to M1 and note the formulas that appear on the entry contents line. What change in the formula indicates that a "relative" formula was used? ____________________________

____

____

____

____

Now review the steps for using the REPLICATE command. Fill in the blanks in the steps below:

1. Put the __________ at the first entry position in the range one wants to ____________________
2. The user key which will begin the REPLICATE command is ______ __________________

3. The prompt line will then read ______________________________

____

4. Press __________________ to set the source range.

5. Enter the __________________ range as the final position for replication of the formula.

6. The prompt line now reads_____________________________________

____

7. For each coordinate in the formula either press _________ or ___________ depending on whether the coordinate should remain unchanged, or interpreted as relative to the position of each copy of the formula.

It is also possible to replicate a range of formulas. That is, one can replicate more than one formula at a time. Check with the instructor for a handout on this procedure or read the manual which accompanies the electronic spreadsheet program being used.

Learning Experience 5

Adjusting Column Widths

****

Purpose:

The purpose of this learning experience is to assist the student to become familiar with the command necessary to adjust column widths on an electronic spreadsheet.

Objectives: After completing this learning experience, the student will:

1. Develop the skill to adjust column widths as needed.

****

Load the electronic spreadsheet program and with the cursor at coordinate A1, type in the label "ORANGE JUICE." Enter this label into the spreadsheet. How does the entry contents line differ from what is now showing on the spreadsheet at coordinate A1? ____________________

____

____

The entry contents line reveals the complete word "orange juice," but the coordinate only allows one to view the first few letters of this item because the cursor is set on a column width of that many spaces.

It is possible to adjust the column width, however. This is done by calling up a global command for setting a column width. For example, in the Visicalc Program produced by Software Arts for the Radio Shack TRS-80 Model III and 4 microcomputers, the column width can be as wide as sixty spaces.

Now, move the cursor to coordinate A2 and type in the number 987233.8007. Enter this number into the electronic spreadsheet. Notice what happens on the entry contents line and at the coordinate A2 on the screen. How are the two numbers different.? ____________________

____

____

It is important to note that although only a portion of the number is revealed at the coordinate, the entire number is stored by the program and is used in any calculations involving that number.

In the space provided, write in the command sequence which will allow one to display on the prompt line the options for modifying column widths: ____

Now, write down the prompt which appears when the command is entered:

____

Use these commands to obtain a column width sufficient enough so that the entire word ORANGE JUICE appears within the highlight cursor when "orange juice" is entered into the spreadsheet. What column width had to be selected? ____________________

For the less sophisticated electronic spreadsheet programs the column width command is a GLOBAL COMMAND. This means that whatever is done will affect the entire window or sheet. Thus, for many spreadsheets, it is not possible to have varying column widths on a single spreadsheet. Therefore, it is necessary to select the column width that will display the information in the most appropriate form.

Practice displaying column widths of various sizes. Display a column width of: 4, 23, 60, and 10.

In the space below, write down the necessary steps to modify the width of the columns on the electronic spreadsheet being used:

Learning Experience 6

Understanding the Storage Command

****

Purpose:

The purpose of this learning experience is to familarize the student with the functions of the storage command used by an electronic spreadsheet program.

Objectives:

After completion of this learning experience the student will be able to:

1. Explain the purposes of the storage command for an electronic spreadsheet.
2. Demonstrate an ability to save a current spreadsheet and load the saved sheet back into the microcomputer.
3. Demonstrate an ability to appropriately name a file for storage.
4. Demonstrate an ability to quit a spreadsheet and delete a sheet one does not want to store.

****

An electronic spreadsheet will have a STORAGE command which will allow one to do the following:

1. Load a file previously developed into the microcomputer
2. Save a file that one has developed or has been working on
3. Delete a file that one no longer wishes to save

The specific keystrokes for the operations mentioned above are different for each spreadsheet software program. In the spaces provides below write in the keystroke sequence which correspond to the following commands:

a. To obtain the STORAGE command prompt type____________________

b. With the storage prompts displayed on the prompt line, enter the keystroke________________ to LOAD a previously saved program. Then ENTER the file name.

c. To SAVE a program one has beed working on, type in the keystroke ______________ and ENTER the file name.

When an electronic spreadsheet has been saved on a diskette it is called a FILE. Each file must be assigned a unique name in order to recall that file. It must be unique to the diskette on which it is filed. When one saves a file to a diskette, then the file name and the "address" of where the file is located on the diskette are both stored on that diskette's directory. IF ONE USES A FILE NAME THAT HAS BEEN PREVIOUSLY USED ON THE SAME DISKETTE, THEN THE NEW FILE WILL BE WRITTEN OVER THE OLD FILE. If the two files are completely different, then the first file will be lost. The first file will be erased and replaced with the new file of the same name. However, if a previous file has been loaded into the microcomputer and new information has been added, then one will want the new file to replace the old file. If one wants to save both files, then the new file will have to have a new file name different from the original file.

It is necessary to have a VALID file name. Written into the electronic spreadsheet program is the conditions for a valid file name. These conditions must be followed if the program is to accept the file name. Otherwise, a message such as "invalid file name" will appear on the prompt line. The instructor will supply the student with a handout that explains the characteristics of a valid file name.

Finally, when saving a file from an electronic spreadsheet, it is important to save the file on the appropriate diskette. Usually two disk drives will be used. One disk drive will include the electronic spreadsheet program. The other will be called the data diskette. When saving a file, one must add to the file name the disk drive where the file is to be stored. Check with the instructor to determine what keystrokes will save the spreadsheet on the data diskette.

If there are several files stored on a single data diskette, the electronic spreadsheet program will usually have a way for one to scroll through the directory. Then one merely stops at the file name that is to be recalled to the screen. In the space provided below write in the keystroke command which will allow scrolling through existing file names in the electronic spreadsheet program being used:

____

Now, obtain a data diskette from the instructor which includes several files and practice scrolling the directory and loading various files. Then make sure to save those files again on the data diskette.

Learning Experience 7

Developing a Budget and Manipulating the Window Display

****

Purpose:

The purpose of this learning experience is to assist the student to develop the knowledge and skills to use an electronic spreadsheet prorgam to develop a budget and manipulate the window by splitting the screen both horizontally and vertically.

Objectives:

After completing this learning experience, the student will be able to:

1. Load a program from a data diskette
2. Fix program titles either horizontally or vertically
3. Justify a column or row either to the left or right
4. Split the screen either horizontally or vertically
5. Enter data in a budget

****

Introduction

One of the primary purposes of an electronic spreadsheet is to develop a budget or manipulate an actual budget. Some of the larger electronic spreadsheets can be used to produce a budget that requires almost a thousand columns and rows! A spreadsheet of that size and complexity would hardly be needed by the usual child care business operation, however.

The value of using an electronic spreadsheet for budget projection and storing the actual budget should be rather obvious by now. In developing a planning budget, changes can be made that might affect other portions of the budget. These changes will occur automatically if appropriate values and formulas have been correctly entered at the appropriate entry position coordinates.

For this exercise, the instructor will supply the student with a data diskette which contains a planning budget and an actual budget. A handout will also be supplied to the student that will allow completion of this exercise. Remember to follow the steps carefully. Before entering any information into the electronic spreadsheet, check the entry contents line to make sure the correct information has been keyed in. If an error has been made, then remember to clear that information and retype the correct information before entering it into the spreadsheet. If incorrect information has been inadvertly entered into the spreadsheet, then use the appropriate keystrokes to clear that entry position and begin again. The student should have a handout which explains the commands for clearing an entry position. Keep that handy for ready reference.

The steps printed below should be carefully followed to complete this exercise:

1. Load the program and data diskettes into the appropriate disk drives.
2. Enter the command to load the file which contains the actual budget. The instructor will supply the name of the file to be entered.
3. The screen should now look like that shown in the figure on the following page. Scroll through the entire budget and note the information in the entry contents line for each coordinate.

Freezing Horizontal and Vertical Titles

It is not possible to view the entire budget without scrolling to the end of the budget to view the items TOTAL and PERCENT. At one point in the scrolling process all one is able to see is a series of columns of figures. Without the titles these figures do not seem to mean much. To keep in mind what the figures on each row actually mean, one can "freeze" the titles so that they will always remain in the first column on the left hand side of the window of the spreadsheet. The instructor will provide a handout that will explain the process for freezing titles both horizontally and vertically. Use that handout to complete the next part of this exercise.

THE BASIC ELECTRONIC SPREADSHEET************
*****TITLES IN COLUMN A ARE FROZEN IN PLACE

	A	B	C	D	E	F
1	MONTH	JAN	FEB	MAR	TOTAL	PERCENT
2						
3	INCOME	1800	1800	1800	21600	
4						
5	PAYROLL	480	480	480	5760	0.27
6	ADVERTISI	30	30	30	360	0.02
7	DEPRECIAT	75	75	75	900	0.04
8	FOOD	210	210	210	2520	0.12
9	INSURANCE	24	24	24	288	0.01
10	SUPPLIES	60	60	60	720	0.03
11	POSTAGE	15	15	15	180	0.01
12	RENT	200	200	200	2400	0.11

In this example, the titles in column A are frozen in place so that both the totals and the final two columns, TOTAL and PERCENT can be viewed simultaneously.

Figure 4

In the space provided, write in the keystrokes which will display the prompt line for fixing or "freezing titles."

____

2. Write down each prompt provided by the command to fix titles and explain its meaning:

____

____

____

____

____

____

3. Using the information above, freeze the titles in column A and then scroll across the spreadsheet until the last two column display TOTAL AND PERCENTAGE. Notice that the titles in column A remain on the screen during the scrolling process.
4. Now, freeze the horizontal titles. Then scroll vertically up and down the spreadsheet and notice what occurs.
5. Unfreeze both horizontal and vertical titles and save the program under its original file name. Check the previous handout and follow the steps carefully. Be sure to read the prompt line and follow the instructions given by the program.
6. For further practice, enter the file of the planning budget and go through the above procedure again.

The Window Command

Often one may wish to compare rows or columns which are too far apart on the electronic spreadsheet to be displayed in a single window. For this reason, the electronic spreadsheet program has a command which will allow the screen to be split either horizontally or vertically. Thus, two separate portions of the screen can be viewed simultaneously. In the space provided, write down the command which will display the prompts for manipulating the window display: ____________________

Several possible selections can now be made. On the following line write down what each prompt is and what it means:

____

____

____

____

____

Load the planning budget from the data diskette supplied by the instructor. First scroll through the budget and note the entry contents line for each coordinate. Then, using the proper keystroke commands, split the screen vertically. First of all, make sure that the cursor is on the coordinate E1. Columns A, B, C, and D are now on the left hand side of the screen while columns E and F appear on the right hand side of the screen. Actually both sides of the screen contain the entire planning budget. Prove this by scrolling through the screen on the left until it displays exactly the same information as is shown in the spreadsheet on the right. In this example, the value of the split screen is to allow one to see both the titles and the final two columns which contain totals and percentages of the planning budget.

Notice, however, that the cursor remained in the screen to the left. There is a command which will move the cursor to the right side of the screen. Write down the keystrokes that will move the cursor from one side of a split screen to another: ________________

Set both sides of the screen so that the left screen displays the titles and the right screen displays columns N and O which contain totals and percentages, respectively. Suppose that you want to scroll down both screens at the same time? This can be done using another window command. In the space provided, write down the keystrokes that will allow synchronized scrolling either horizontally or vertically:

____

Practice this command of synchronized scrolling with the screen split vertically. What is the value of synchronized scrolling of a split screen? ____

____

____

Finally, there will be a prompt that will allow one to discontinue synchronized scrolling. Enter that prompt keystroke here: ____________

Now, practice the various window commands until familar with them.

Quit the planning budget and enter the actual budget. Notice that this is an incomplete budget. Enter appropriate data to complete this budget and file it back on the data diskette. Change any information already printed on the budget. Make this as realistic a budget as possible for a child care center which serves thirty-five children. You will need to determine what the profit margin is to be. In the next exercise, a copy of both the planning budget and the actual budget will be printed to obtain a "hard copy" of the data stored on the electronic spreadsheet.

Learning Experience 8

Printing from the Electronic Spreadsheet Program

****

Purpose:

The purpose of this learning experience is to assist the student to learn to print information entered on the electronic spreadsheet.

Objectives:

Following the completion of this learning experience, the student will be able to:

1. Identify the command used for printing the electronic spreadsheet.
2. Determine the printer characteristics necessary for printing the electonic spreadsheet.
3. Use the printer command to print data from the electronic spreadsheet.

****

The two primary types of printers used with microcomputers are the dot matrix printer and the daisy wheel printer. The dot matrix printer uses a series of small dots to create each typed character. The daisy wheel printer has a wheel of hard plastic that contains a single character on each spoke of the wheel. This type of printer will produce a copy that looks as though it was typed on an electric typewriter.

Before beginning to print from any software program, it is important to make sure that all of the equipment is properly connected. The printer will connect to the microcomputer by a special cord. Make sure that the printer is supplied with paper properly fed into the printer and that the printer is turned on before truning on the microcomputer. As was mentioned earlier, this is to ensure that no power surge goes through the microcomputer itself.

The instructor will make sure that the appropriate command has been entered into the electronic spreadsheet program so that it will be compatible with the printer being used. Check with the instructor to learn how to enter printer codes into the electronic spreadsheet program for compatibility with the microcomputer and printer being used.

Use the data diskette and the electronic spreadsheet program to enter the file containing the planning budget. This is a completed budget for a one year period. A hard copy of this budget will be printed.

Having completed the proper set-up procedures, one is ready to print from the electronic spreadsheet. The electronic spreadsheet programs print rectangle portions. First of all, one needs to position the cursor where the printing is to begin. The enter the print command

In the space provided, write in what print command is used in the electronic spreadsheet: ________________ This command will bring up a prompt line. For the less sophisticated electronic spreadsheet programs, such as the earlier versions of the VisiCalc program, the prompt line will indicate three possibilities. These are: File, Printer or RS-232. The first prompt allows one to "print" to a diskette file, a modem or other device. The printer and RS-232 prompt are for line or serial printers, respectively. Check with the instructor to determine what the printer prompt commands for the program being used mean and enter that information on the lines below:

____

____

____

____

____

Now, enter the appropriate printer command. A prompt line will appear. For the moment, ignore anything on the prompt line except the statment which requires moving the cursor to the lower right hand corner one wishes to print. This can be done by either moving the cursor to that position or typing in the correct coordinate.

The printer will now print the section marked off by the two cursor positions. The best way to print a sheet that is wider than the printer being used can accomodate is to print the material in two sections. Then the two sections can be taped together to create a hard copy of the electronic spreadsheet. To do this, check with the instructor for specific handouts for the printer and electronic spreadsheet program being used.

Learning Experience 9

Menu Planning on the Electronic Spreadsheet

****

Purpose:

The purpose of this exercise is to assist the student to use the electronic spreadsheet for menu planning.

Objectives:

Following the completion of this learning experience, the student will:

1. Demonstrate ability to develop a menu for one week for a specified number of children.
2. Produce a hard copy of the menu.
3. Describe the advantages of using an electronic spreadsheet for menu planning.

Introduction

One of the largest expenses for a child care facility is food. Most states set specific regulations concerning the percentage of daily nutritional requirements that must be provided by a child care facility. Food costs can be kept reasonable with proper menu planning. One way to do this is to produce a series of seasonal menus (menus which take into account lower prices because of seasonal availability of certain produce). A series of such menus could be rotated on a basis of, say, every five or six weeks. With the appropriate data entered into an electronic spreadsheet program, any alterations could easily be made.

Suppose the director of a child care center is used to serving 35 children, but expects to expand operations so that 56 children could be served. For menus stored on an electronic spreadsheet, it would be a very easy process to determine how much extra food would be needed and how much that food should cost in the coming year.

Obtain from the instructor the data diskette which contains the menu and load that file into the microcomputer.

Read through the menu carefully so that an understanding of each column and row entry is developed. Note that column A provides a label description of each food item. Column B indicates how many children are to be served. In this example, the child care center serves thirty-five children daily. Columns C and D need to be read together. These indicate the portion and description of the portion. Notice, that the AM SNACK consists of toast and orange juice. Each child is to receive one (poritom) slice (description) of toast and five (portion) ounces (description) of orange juice. Column E then gives the total volume for each menu item. For example, thirty-five slices of toast are needed if each of thirty-five children are to recieve a slice of toast for the AM SNACK.

Column F refers to the unit size in which items can be purchased. Notice that the unit size for bread (from which the toast is to be made) is twenty-six. The average loaf of bread contains twenty six slices. Orange juice is to be purchased in the thirty-two ounce size.

Now, put the cursor at E5 and notice the entry position line. A forumla has been entered there which is +B5*C5. This tells the electronic spreadsheet program to take the number in B5, which is the number of children to be served, and multiply it by the portion size, which in this case is one slice. Thus, the volume (in this case, the number of slices of toast) is thirty-five. Scroll down column E and note the formulas on the entry position line.

There is also a formula to be found at G5. That formula is +E5/G5 which reads, "take the volume at E5 and divide it by the Unit figure at F5." This will give the number of units that have to be purchased to assure that each of thirty-five children receive the portion stated in the menu. Scroll down column G and note the formulas included at each entry position in the menu.

The final column of the menu gives a description of how each item can be purchased. Bread is purchased in loaves, orange juice in quarts, etc.

To complete this exercise, create a menu for the remainder of the week. Be sure that the menu created meets the nutritional standards set by the state liscensing agency. Change the "number served" to be the actual number served at the center where you are employed. If staff receive meals also, then be sure to include them in the menu planning process.

Finally, print a copy of the complete menu and turn it in to the instructor. On a separate sheet of paper include any remarks that will clarify the choices made in planning the menu for the rest of the week.

It is possible to develop a more complete menu using the spreadsheet that would also include the cost of the items to be purchased, a total cost for the day's menu and a cost per child. This could be important information for the child care administrator who must balance nutritional requirements with food costs.

With the menu loaded into the microcomputer, move the cursor to column I and title this column ACTUAL QUANTITY (an abbreviation will be necessary to have the title fit in the space provided). Then title column J COST PER QUANTITY (to have the title fit in the required space, use $/QUAN. Remember that to begin a label with a symbol one must use a special keystroke. Then move to column K and label this column TOTAL. Freeze the vertical columns so that the food names will show in column A while working on columns I through J.

The first item on the menu is bread. The menu shows that you need more than a single loaf. In column I, enter a value of 2, since two loaves of bread will be needed to make toast for thirty-five children.

In column J, enter the cost of a single loaf of bread. In column K, a formula will be needed. This formula should indicate the total cost of the number of loaves of bread needed. Thus, the formula will be +I*J. But be sure to enter the appropriate entery position numbers as well. In column K will appear the total cost of two loaves of bread. Continue throughout the menu to fill in the costs and totals for each item on the menu. When this is completed, the next step is to enter a formula that will give a total for column K.

Every electronic spreadsheet has a variety of functions which can be entered into the electronic spreadsheet. The formula that is needed here is one that will total all of the value entries in column K. Check with your instructor or the spreadsheet program manual to discover what formula needs to be placed in the spreadsheet at entry position K19. Write the keystrokes needed to enter a "sum of" formula into the program: ______________. Enter this formula now. Notice what happens on the spreadsheet. A total for all the menu items should appear at entry position K19.

One final item can be included on this menu program. One could enter a formula to calculate the cost per child per day for food. To so this move the cursor to column L. On the title line, type in the label $/CHILD. Remember to use the special keystroke to start a label with a symbol other than an alphabetic one. Now, a formula must be added at entry position L19 which divides the total food bill by the number served. Enter +K19/B5. This reads, "take the total of the food bill and divide it by the number of children to be served. Enter this formula and note what happens on line L19. This is the total food cost for Monday per child.

How about printing out a grocery list now? All that has to be done is to freeze the vertical column A1. Then scroll until the column which indicates the actual quantities to be purchased can be viewed on the screen. Now it is possible to print a grocery list for that day. This could be done for the entire week if groceries are purchased on a weekly basis.

A variety of information can be easily determined by using the electronic spreadsheet for menu planning. Not only can a menu be written and recalled at will, but also cost factors can be determined. In this way, the child care administrator can prepare well-balanced, nutritious meals at a low cost. Finally, even a week's grocery list can be printed from the information on the spreadsheet!

To complete this exercise, develop a menu for one week. Change the number of children to match the number of children at the center where you work. Then print out the following:

1. The menu for the entire week.
2. The actual cost of the menu for the week.
3. A grocery list for the week.

Remember to use all of the special features of the electronic spreadsheet program as needed. Turn in the hard copy to the instructor for evaluation.

****

CHAPTER VI

STUDENT'S RESOURCE GUIDE

ACCOUNTING

****

TABLE OF CONTENTS

Chapter VI - Accounting

Student's Resource Guide

Introduction..1

Accountancy Software..2

Pretest..5

The General Ledger..8

The Accounts Receivable Program......................24

The Accounts Payable Program..........................41

Summary..55

Chapter VI

Accounting

****

Introduction

Accurate recordkeeping is one of the primary responsibilities of the child care administrator. Keeping accurate financial records is a must if the business is to remain solvent. Many child care administrators would prefer to hire a Certified Public Accountant or Bookkeeper rather than attempt to keep account records themselves. Certainly, it may be necessary to use the services of a CPA for preparing final reports. However, the microcomputer can be effectively used to keep up-to-date financial records even if the final reports are to be prepared by someone outside of the center.

It is necessary for the student to have some basic knowledge of accounting principles and procedures before attempting to use any accounting software. One should know the terminology of the field and the various types of account records that are kept. For this reason, the pretest for this unit is rather important. The student should seek to understand any items missed on the pretest before proceeding with this unit.

Accountancy Software

There is a wide variety of accountancy software produced for the microcomputer. If fact, the list seems almost endless! Listed below are but a few of the accounting software programs available as of 1984:

1. Peachtree Software Inc. This company produces the Peach Pak 4. It consists of three interactive accounting packages for the small business with limited microcomputer capability. Included are a general ledger, accounts payable, and accounts receivable. The company also produces a series of accounting software packages which include Accounts Receivable, CPS Multi-Ledger System, General Ledger, and Accounts Payable.
2. Attache' Software Inc. This company produces a package of accounting software sold in an attache' case. The modules include Accounts Receivable, Accounts Payable, Inventory Control, Invoicing/Sales analysis, General Ledger and Payroll. The Business Pak 2 includes Accounts Payable and the General Ledger.
3. Certified Software Inc. The Certified Accounting System is produced by this company. It includes Payroll, Accounts Payable, Accounts Receivable , Inventory and General Ledger. This is an entry level integrated accounting package that can be customized by the user, without programming experience or source codes, to fit one's needs.
4. Futurehouse, Inc. produces the Complete Personal Accountant. This is a complete personal and small business finance package. A running demonstration of the program is included.
5. Mark Data Products offers the Business Accounting System which

provides double entry accounting. The package provides a fast way to process income and expenses, prepare detailed reports and maintain records required at tax time.

6. Micro Architect, Inc. has developed the IAP or Integrated Accounting Package. It includes a General Ledger, Accounts Receivable, Accounts Payable, Payroll, Inventory, and Order Entry.
7. Omni Software Systems, Inc. The Accountant Program produced by this company is designed to provide an easy method for keeping records and preparing financial reports. This company also produces the Complete Business System Program which can also print checks and Financial Statements as well as other reports.
8. Softlink Corp. The Practical Accountant Program is a single entry accounting system specially designed for small businesses. It is an easy to use program with extensive report capabilities.
9. Small Business Systems Group. This company produces a set of four modules for a complete accounting package. In this system, one is allowed considerable flexibility in designing the chart of accounts. The programs produce a variety of reports. All of the modules are coordinated with one another.

The above list is not meant to be in any way exhaustive, but only to show the variety of accounting programs currently available. The child care administrator should carefully outline what it is that a microcomputer accounting program is do to. Then, check to see what software is available for what microcomputer. Most companies produce software for just a few microcomputers.

If accounting is the major reason for purchasing a microcomputer for business use, then it is especially important to check all the possible software programs carefully. Be sure not to buy more program than is actually necessary. In the world of business, "small business" could mean any company which employes less than one thousand people. Software prepared for the larger of the "small businesses" may actually be much more than is really needed.

Learning Experience 1

Pretest

Purpose:

The purpose of the of this pretest is to give the student an opportunity to check some basic knowledge from the field of accounting. If the student does well on the pretest, then he/she is ready to complete the learning exercises in this chapter.

Objective

The student will demonstrate basic knowledge of the field of accounting before attempting further learning in this chapter.

1. What is the purpose of a General Ledger System?

2. What is a Chart of Accounts?

3. What are the two major financial reports produced by a General Ledger System?

____________________ ____________________

4. What are the four basic categories of accounts found on financial reports?

5. To increase an asset account you (debit credit) the account and the normal balance of such an account is a (credit debit).

6. Financial Reports are usually produced:

____

____

____

____

or

____

7. What is the purpose of an Accounts Receivable System?

8. Which of the following are produced by an Accounts Receivable System?(put a check by each correct answer)

______Invoices

______Credit Memos

______Debit Memos

______Statements

______Customer List

______Aged Account Report

8. What is the purpose of an Accounts Payable System?

10. Which of the following is produced by an Accounts Payable System? (put a check by the correct answers)

_____Invoices

_____Credit Memos

_____Debit Memos

_____Open and Closed Item Listing

_____Vendor Listing

_____Checks

_____Check Register

11. What is the purpose of a Payroll System?

12. Which of the following is produced by a Payroll System? (put a check for each correct answer)

_____Employee Listing

_____Checks

_____Check Register

_____941A

_____W-2

_____Insurance Report

_____Posting to 12 different G/L accounts

Learning Experience 2

The General Ledger

Purpose:

The purpose of this learning exercise is to familiarize the student with the General Ledger portion of a complete accounting system and to assist the student to develop the skills to enter information into a general ledger using a microcomputer.

Objectives:

Following the completion of this learning exercise, the student will be able to:

1. Explain the function of a General Ledger.
2. Demonstrate skill in entering data into the General Ledger
3. Define a Chart of Accounts
4. Explain the importance of Backup Diskettes for the General Ledger
5. Describe the special features of the General Ledger Program being used
6. Explain the menu options on the General Ledger program being used and demonstrate skill in their use for entering and manipulating data
7. Demonstrate skill in printing a hard copy from the General Ledger.

Introduction

A General Ledger is a method of bringing together financial data from direct posting; that is, entering information directly into the ledger, or from other accounting subsystems. Information can be added to the General Ledger from Accounts Receivable , Accounts Payable, Payroll, or an Order Entry system.

From the information posted in the General Ledger, one can obtain a Balance Sheet, a Trial Balance Sheet, an Income Statement, or special reports designed by the business administrator or manager. Data in a General Ledger is used to prepare reports monthly, quarterly, yearly, or by the previous three quarters.

In order to produce an effective General Ledger, it is necessary to develop a complete Chart of Accounts. Each account included in the chart of accounts must have an Account Name and an Account Number. Most General Ledger software programs have certain built-in Account Names and a series of numbers assigned to those names. With the more sophisticated General Ledger software programs, more flexibility in configuration of the chart of accounts is allowed the user. For example, the Small Business Systems Group General Ledger program allows the user to select account numbers, account descriptions, and report formats based upon one's own unique needs.

All of the available accounting software share with other programs the fact that they are "menu-driven." For example, the main menu of the SBSG General Ledger Program is as shown on the following page. This menu is used somewhat differently than that of, say, a word processing program. In this menu, it is necessary to "configure" the system before attempting to add any accounting data. The system configuration accepts all of the specifics of the user's accounting procedures and actually does the system configuration and initializing of data files.

```
                SBSG GENERAL LEDGER CONFIGURATION MENU

MAIN MENU:

          Configure

          Processing, Please be Patient......

          1)  Granule size

          2)  Number of Drives

          3)  Systems

          4)  Diskettes

          5)  Change File Sizes

          6)  Diskette - Drive Allocation

          7)  Configuration Report

          8)  Initialize Files

          9)  Printer Top of Form
```

As has been noted with other software packages, in addition to the menus provided, there will also be a series of "prompts." For example, the SBSG General Ledger program uses the first four lines of the CTR screen to display the following:

*line one - name of program and name of menu selection

*line two - prompt by the computer to user

*line three - if blinking, awaiting response from user

*line four - bulletin from the computer (such as Processing, Please be Patient.......)

The instructor will provide the student with the necessary handouts to understand the main menu items and procedures for the accounting software being used.

SBSG General Ledger Overview

The Small Business Systems Group General Ledger accounting module can be used to generate a variety of major reports which include Balance Sheets, Trial Balance Sheet, a 'Special Report' designed by the user, and Income Statements. All data is maintained and reported by month, quarter, year, and previous three quarters.

The data files included in the system are:

1. The Regular External Posting file which is a random sequential file of user definable size which contains regular update posting from external modules such as Accounts Receivable, Accounts Payable, and Payroll.
2. The Direct Posting file which contains transactions entered using the G/L menu option #1.
3. The Chart of Accounts file of user definable size which contains the account information.
4. The General Information File which is of fixed length and contains the company information.
5. The Sort Area file which provides adequate sort space for the

largest G/L file.

6. Program System Operation files such as the configuration file, the Diskette Name file, the loader program, etc.

Chart of Accounts Design

Each accounting software package includes certain "givens" which must be included in the Chart of Accounts file. These are must account headings if the program is to run properly. Also specified by the program is the account numbering system; that is, certain numbers are set aside for particular categories within the Chart of Accounts.

If one were using the SBSG General Ledger module, then the following accounts in the General Ledger Chart of Accounts would have to be set up in order to run a fully coordinated system:

CASH
ACCOUNTS RECEIVABLE
ACCOUNTS PAYABLE
SALES TAX PAYABLE
DEFERRED INCOME
FED. WITHHOLDING
STATE WITHHOLDING
FICA
SDI
PIECEWORK PAY
HEALTH AND WELFARE PAY
VACATION PAY
OTHER PAY
NON-TAXABLE PAY
CASH-PAYROLL
SHIPPING
HANDLING, ETC.
REGULAR PAY
OVERTIME PAY
OTHER DEDUCTIONS

There are four basic account categories: assets, liabilities, income and expense. Each of these is broken down into titles, headings and regular G/L accounts grouped at different detail levels for subtotals and totals.

Backup diskettes are essential when using an accountancy software program.

These should be developed and maintained on four levels:

1. Yearly- one separate G/L diskette should be maintained for filing all yearly data verified. This diskette should be labeled: "Not for Use--Year End XX Verified Data".
2. Quarterly- two diskettes should be used on an OLD/NEW rotating basis. One diskette should be labeled "Not for Use: Quarter-to-Date Verified Data". This diskette would contain the file of the summary of quarterly information verified through the end of the previous quarter. The second diskette would be used to rotate through the monthly rotation which will become the new "Quarter to Date" diskette at the end of a new quarter.
3. Monthly- two diskettes should be maintained for monthly reports. These would be on an OLD/NEW rotating basis. One diskette would be labeled, "Not for Use: Month End XX/XX/XX Verified Data". The second diskette would be rotated through the current level which will become the new Month-End and ultimately the Quarter-End diskette at the appropriate time.
4. Current- diskettes on an OLD/NEW basis should be maintained at all levels of input. A "key level" would be any time data is entered or updated (before one shuts off the computer).

With backup diskettes designed as mentioned above, one would be able to easily recover data for these key periods: last year/end, last quarter/end, last month/end, and yesterday.

A General Ledger Main Menu

Printed below is the "main menu" for the Small Business Systems Group General Ledger module:

```
                General Ledger Program Selection Menu

                       Choose Program By Number

*

-



1)General Information F/M

2)Direct Posting

3)   Updated

4)   Reports

5)   Chart of Accounts F/M

6)   File Recovery

7)   End
```

In this General Ledger software package, the "*" indicates that the user is to enter some data; in this case, the menu item being selected. Directly below the "*" is a blinking cursor, reminding the user that the program requires some data in order to proceed. The "F/M" for menu items 1 and 5 stands for "File Management".

General Information F/M. Selecting menu item 1 will bring to the screen a listing of 15 items which identify the company by name, provide the company address, allow the user to enter basic information pertaining to payroll, such as the number of the next payroll check, the hourly rate, a payroll number--indicating bi-monthly, bi-weekly, weekly, etc., the period start and end date, the date the company's fiscal year ends, The current date, and Federal/State taxing numbers. The program uses this information when performing certain calculations or printing out required reports.

Chart of Accounts F/M. One uses this menu item to set up and maintain the chart of accounts. Figure 1 on the following pages is the chart of accounts developed for the simulated "Longhorn Child Care Center". In this system, account numbers are six digits, five predecimal and one post decimal digit. For the entire system, the available numbers are 10000.0 to 99999.9. Accounts *must* be assigned a number according to the following scheme:

Assets	10000.0 - 19999.9
Liabilities	20000.0 - 29999.9
Income	30000.0 - 39999.9
Expenses	40000.0 - 49999.9

Using the LONGHORN CHILD CARE CENTER General Ledger Accounts chart, answer the following questions:

1. How many "Asset" accounts are there?
2. What is the total of the assets accounts?
3. How many "Liabilities" accounts are there?
4. What are the account names for the two income accounts?
5. How long has this center been in operation? How can you tell?

Stu-VI-16

```
                                        LONGHORN CHILD CARE CENTER                   Date 01/31/8
                                         General Ledger Accounts                    Page  1

Account  Name                                   This Mo     This Year      This Qtr   Prev Qtr-1    Prev


11100.0 CASH IN BANK                           4989.14       4989.14       4989.14         0.00
11111.0 CASH-PAYROLL ACCT                      5316.73-      5316.73-      5316.73-        0.00
11200.0 CASH ON HAND                            452.25        452.25        452.25         0.00
11410.0 ACCOUNTS RECEIVABLE                    2380.85       2380.85       2380.85         0.00
11500.0 PREPAID EXPENSES                          0.00          0.00          0.00         0.00
16100.0 LAND                                  28500.00      28500.00      28500.00         0.00
16150.0 BUILDINGS                            126430.00     126430.00     126430.00         0.00
16200.0 DEPRECIATION ON BUILDINGS               356.00        356.00        356.00         0.00
16250.0 VEHICLES                               6984.00       6984.00       6984.00         0.00
16300.0 DEPRECIATION ON VEHICLES                120.00        120.00        120.00         0.00
16350.0 EQUIPMENT & FIXTURES                  29842.00      29842.00      29842.00         0.00
16400.0 DEPRECIATION ON EQUIP & FIXTRS          245.00        245.00        245.00         0.00
18100.0 DEPOSITS                                285.00        285.00        285.00         0.00
21300.0 ACCOUNTS PAYABLE                        431.86        431.86        431.86         0.00
21325.0 NOTES PAYABLE - CURRENT                8700.00       8700.00       8700.00         0.00
21350.0 DEFERRED INCOME                           0.00          0.00          0.00         0.00
21400.0 SALES TAX PAYABLE                         0.00          0.00          0.00         0.00
21500.0 WAGES PAYABLE                             0.00          0.00          0.00         0.00
21611.0 FEDERAL WHT PAYABLE                     176.32        176.32        176.32         0.00
21612.0 STATE WHT PAYABLE                         0.00          0.00          0.00         0.00
21613.0 FICA PAYABLE                            387.53        387.53        387.53         0.00
21614.0 STATE DISB INSURANCE                      0.00          0.00          0.00         0.00
21615.0 OTHER DEDUCTIONS                          0.00          0.00          0.00         0.00
22000.0 ACCRUED EXPENSES                          0.00          0.00          0.00         0.00
23000.0 NOTES PAYABLE - LONG TERM             42695.00      42695.00      42695.00         0.00
23100.0 MORTGAGE PAYABLE                      89629.00      89629.00      89629.00         0.00
29000.0 NET WORTH                             51805.80      51805.80      51805.80         0.00
31000.0 FEES INCOME                               0.00       3375.85       3375.85         0.00
32000.0 INTEREST INCOME                           0.00         23.12         23.12         0.00
42400.0 TRAVEL                                    0.00         50.00         50.00         0.00
```

FIGURE 1

LONGHORN CHILD CARE CENTER
General Ledger Accounts

Date 01/31/8
Page 2

Account	Name	This Mo	This Year	This Qtr	Prev Qtr-1	Prev
42700.0	SHIPPING	0.00	0.00	0.00	0.00	
43111.0	REGULAR PAY	0.00	5784.00	5784.00	0.00	
43112.0	OVERTIME PAY	0.00	0.00	0.00	0.00	
43113.0	PIECE WORK PAY	0.00	0.00	0.00	0.00	
43114.0	HEALTH & WELFARE PAY	0.00	0.00	0.00	0.00	
43115.0	VACATION PAY	0.00	0.00	0.00	0.00	
43116.0	OTHER PAY	0.00	0.00	0.00	0.00	
43117.0	NON-TAXABLE PAY	0.00	96.58	96.58	0.00	
43200.0	PAYROLL TAXES	0.00	0.00	0.00	0.00	
44000.0	ADVERTISING	0.00	18.50	18.50	0.00	
44100.0	BANK & CREDIT CARD CHARGES	0.00	0.00	0.00	0.00	
44200.0	CONTRACT SERVICES	0.00	85.00	85.00	0.00	
44300.0	DEPRECIATION	0.00	721.00	721.00	0.00	
44400.0	DUES & SUBSCRIPTIONS	0.00	40.00	40.00	0.00	
44500.0	FOOD	0.00	110.00	110.00	0.00	
44600.0	INSURANCE	0.00	200.00	200.00	0.00	
44700.0	INTEREST	0.00	0.00	0.00	0.00	
44800.0	EDUCATIONAL SUPPLIES	0.00	54.51	54.51	0.00	
44900.0	OFFICE SUPPLIES	0.00	40.92	40.92	0.00	
45000.0	POSTAGE	0.00	0.00	0.00	0.00	
45100.0	PROFESSIONAL FEES	0.00	0.00	0.00	0.00	
45200.0	RENT	0.00	0.00	0.00	0.00	
45300.0	REPAIRS & MAINTENANCE	0.00	25.00	25.00	0.00	
45400.0	TAXES & LICENSES	0.00	0.00	0.00	0.00	
45500.0	TELEPHONE	0.00	28.98	28.98	0.00	
45600.0	UTILITIES	0.00	89.00	89.00	0.00	
45700.0	VEHICLES	0.00	45.73	45.73	0.00	

Stu-VI-17

FIGURE 1 (cont)

```
                             LONGHORN CHILD CARE CENTER                 Date 01/31/84
                              General Ledger Accounts                  Page  1


Account  Name


10000.0 ASSETS                        Sub 50  Title     Balance Sheet  Db  Level 0  2  Lines
11100.0 CASH IN BANK                          Regular   Balance Sheet  Db  Level 0
11111.0 CASH-PAYROLL ACCT                     Regular   Balance Sheet  Db  Level 0
11200.0 CASH ON HAND                          Regular   Balance Sheet  Db  Level 0
11410.0 ACCOUNTS RECEIVABLE                   Regular   Balance Sheet  Db  Level 0
11500.0 PREPAID EXPENSES                      Regular   Balance Sheet  Db  Level 0
16100.0 LAND                                  Regular   Balance Sheet  Db  Level 0
16150.0 BUILDINGS                             Regular   Balance Sheet  Db  Level 0
16200.0 DEPRECIATION ON BUILDINGS             Regular   Balance Sheet  Cr  Level 0
16250.0 VEHICLES                              Regular   Balance Sheet  Db  Level 0
16300.0 DEPRECIATION ON VEHICLES              Regular   Balance Sheet  Cr  Level 0
16350.0 EQUIPMENT & FIXTURES                  Regular   Balance Sheet  Db  Level 0
16400.0 DEPRECIATION ON EQUIP & FIXTRS        Regular   Balance Sheet  Cr  Level 0
18100.0 DEPOSITS                              Regular   Balance Sheet  Db  Level 0  1  Lines
19999.0 TOTAL ASSETS                  Sub 90  Total     Balance Sheet  Db  Level 9  2  Lines
20000.0 LIABILITIES                   Sub 50  Title     Balance Sheet  Cr  Level 0  2  Lines
21300.0 ACCOUNTS PAYABLE                      Regular   Balance Sheet  Cr  Level 0
21325.0 NOTES PAYABLE - CURRENT               Regular   Balance Sheet  Cr  Level 0
21350.0 DEFERRED INCOME                       Regular   Balance Sheet  Cr  Level 0
21400.0 SALES TAX PAYABLE                     Regular   Balance Sheet  Cr  Level 0
21500.0 WAGES PAYABLE                         Regular   Balance Sheet  Cr  Level 0
21611.0 FEDERAL WHT PAYABLE                   Regular   Balance Sheet  Cr  Level 0
21612.0 STATE WHT PAYABLE                     Regular   Balance Sheet  Cr  Level 0
21613.0 FICA PAYABLE                          Regular   Balance Sheet  Cr  Level 0
21614.0 STATE DISB INSURANCE                  Regular   Balance Sheet  Cr  Level 0
21615.0 OTHER DEDUCTIONS                      Regular   Balance Sheet  Cr  Level 0
22000.0 ACCRUED EXPENSES                      Regular   Balance Sheet  Cr  Level 0
23000.0 NOTES PAYABLE - LONG TERM             Regular   Balance Sheet  Cr  Level 0
23100.0 MORTGAGE PAYABLE                      Regular   Balance Sheet  Cr  Level 0  1  Lines
28900.0 TOTAL LIABILITIES             Sub 80  Total     Balance Sheet  Cr  Level 5  1  Lines
```

FIGURE 1 (cont)

Direct Posting. This program allows amounts to be directly posted to the G/L accounts and to print the direct posting file when necessary. When this system is coordinated with the Accounts Receivable, Accounts Payable, and Payroll programs, one needs to post only those items which cannot be entered and updated from the coordinating modules. These would include postings made to adjust balances with errors.

When the second selection is made from the General Ledger Main Menu, one is able to post directly to an account by entering the account number when prompted to do so. It is also possible to print all records in the Direct Posting File. Reports generated by the computer are only as valid as the user who enters the data. It is necessary to study the reports received from the program very, very carefully and correct any errors. Any good accountancy software general ledger program will have methods to correct posting errors.

Posting Update. This menu selection allows for merging direct postings into external postings; the postings are sorted and the Account file is updated. Updated reports are produced and the direct and external posting files are cleared for further data. Whether the General Ledger program is coordinated with other programs or not, the Update option should be run during monthly processing after each extensive data entry session and whenever the posting files are approaching a file full condition. A "File Full" message can be displayed by the G/L Direct Posting program or by module update programs such as Accounts Payable. At such times, it is necessary to update the G/L before one can continue with the present operation at hand.

Additionally, it is always a good idea to run the Update program just prior to the month-end report phase. This will help to insure that all pertinent financial data is in these reports.

The Update program will produce an activity report which must be studied for errors. While the program will produce an error report, only the most blatant errors can be detected by the microcomputer. The old computer adage holds true here--"garbage in equals garbage out". When correcting errors in the G/L, one must decide whether to use the direct posting option or to go back and process the correction through the appropriate module, such as Accounts Receivable. In any event, one should _always_ document any corrections for future reference.

Reports. This program prints all General Ledger financial reports. A full set of reports should be run each month following the final Posting Update for the month.

First, one should run a trial balance and trial income report. Each of these reports should be examined for any possible errors and corrections made as needed. A second set of trial reports should be run following any corrections. When the trial income statement is correct, then one should post the gross profit figure to Retained Earnings. Then a trial balance sheet should be printed. If the balance sheet is correct, one can print all special, monthly, quarterly, etc. reports. The following pages provide examples of a trial income sheet and a trial balance sheet generated by the SBSG General Ledger program. (Note: since no entries had yet been made in the program, the trial income sheet figures all are zeros.)

```
                              LONGHORN CHILD CARE CENTER                 Date 01/31/8
                               Trial Income Statement                    Page  1

  Account         Name                               This Month    Pct

                  INCOME

 31000.0          FEES INCOME                  $           0.00    0.00
 32000.0          INTEREST INCOME                          0.00    0.00

             TOTAL INCOME                      $           0.00    0.00


                  BUSINESS EXPENSES

 42400.0          TRAVEL                                   0.00    0.00
 42700.0          SHIPPING                                 0.00    0.00
 43111.0          REGULAR PAY                              0.00    0.00
 43112.0          OVERTIME PAY                             0.00    0.00
 43113.0          PIECE WORK PAY                           0.00    0.00
 43114.0          HEALTH & WELFARE PAY                     0.00    0.00
 43115.0          VACATION PAY                             0.00    0.00
 43116.0          OTHER PAY                                0.00    0.00
 43117.0          NON-TAXABLE PAY                          0.00    0.00
 43200.0          PAYROLL TAXES                            0.00    0.00
 44000.0          ADVERTISING                              0.00    0.00
 44100.0          BANK & CREDIT CARD CHARGES               0.00    0.00
 44200.0          CONTRACT SERVICES                        0.00    0.00
 44300.0          DEPRECIATION                             0.00    0.00
 44400.0          DUES & SUBSCRIPTIONS                     0.00    0.00
 44500.0          FOOD                                     0.00    0.00
 44600.0          INSURANCE                                0.00    0.00
 44700.0          INTEREST                                 0.00    0.00
 44800.0          EDUCATIONAL SUPPLIES                     0.00    0.00
 44900.0          OFFICE SUPPLIES                          0.00    0.00
 45000.0          POSTAGE                                  0.00    0.00
 45100.0          PROFESSIONAL FEES                        0.00    0.00
 45200.0          RENT                                     0.00    0.00
 45300.0          REPAIRS & MAINTENANCE                    0.00    0.00
```

Stu-VT-21

FIGURE 2

Stu-VI-22

```
                              LONGHORN CHILD CARE CENTER                 Date 01/31/8
                               Trial Income Statement                    Page  2

  Account          Name                                   This Month    Pct
 45400.0          TAXES & LICENSES                             0.00    0.00
 45500.0          TELEPHONE                                    0.00    0.00
 45600.0          UTILITIES                                    0.00    0.00
 45700.0          VEHICLES                                     0.00    0.00

             TOTAL EXPENSES                       $            0.00    0.00


         NET INCOME                               $            0.00    0.00


          Sales Accounts Total                                0.00


          Debit Total                                         0.00
          Credit Total                                        0.00


          RETAINED EARNINGS                                   0.00
```

FIGURE 2 (cont)

LONGHORN CHILD CARE CENTER
Trial Balance Sheet

Date 01/31/8
Page 1

Account	Name	This Month	
	ASSETS		
11100.0	CASH IN BANK	$ 4989.14	
11111.0	CASH-PAYROLL ACCT	5316.73-	
11200.0	CASH ON HAND	452.25	
11410.0	ACCOUNTS RECEIVABLE	2380.85	
11500.0	PREPAID EXPENSES	0.00	
16100.0	LAND	28500.00	
16150.0	BUILDINGS	126430.00	
16200.0	DEPRECIATION ON BUILDINGS	356.00-	
16250.0	VEHICLES	6984.00	
16300.0	DEPRECIATION ON VEHICLES	120.00-	
16350.0	EQUIPMENT & FIXTURES	29842.00	
16400.0	DEPRECIATION ON EQUIP & FIXTRS	245.00-	
18100.0	DEPOSITS	285.00	
TOTAL ASSETS			$ 193825.51

FIGURE 3

LONGHORN CHILD CARE CENTER
Trial Balance Sheet

Date 01/31/8
Page 2

Account	Name	This Month	
	LIABILITIES		
21300.0	ACCOUNTS PAYABLE	431.86	
21325.0	NOTES PAYABLE - CURRENT	8700.00	
21350.0	DEFERRED INCOME	0.00	
21400.0	SALES TAX PAYABLE	0.00	
21500.0	WAGES PAYABLE	0.00	
21611.0	FEDERAL WHT PAYABLE	176.32	
21612.0	STATE WHT PAYABLE	0.00	
21613.0	FICA PAYABLE	387.53	
21614.0	STATE DISB INSURANCE	0.00	
21615.0	OTHER DEDUCTIONS	0.00	
22000.0	ACCRUED EXPENSES	0.00	
23000.0	NOTES PAYABLE - LONG TERM	42695.00	
23100.0	MORTGAGE PAYABLE	89629.00	
	TOTAL LIABILITIES		$ 142019.71
29000.0	NET WORTH	51805.80	
	TOTAL LIABILITIES & NET WORTH		$ 193825.51
	Debit Total	194546.51	
	Credit Total	194546.51	
	Proof	0.00-	

FIGURE 3 (cont)

Learning Experience 2

The Accounts Receivable Program

Purpose

The purpose of this exercise is to familiarize the student with the Accounts Receivable portion of a complete accounting system and to assist the student to develop the skills to enter information into a general ledger using a coordinated accounts receivable program.

Objectives

Following the completion of this learning exercise, the student will be able to:

1. Explain the function of an accounts receivable program
2. Demonstrate skill in using an accounts receivable program for entering data into a general ledger program.
3. Define the special features of the accounts receivable program being used.
4. Explain the menu options of the accounts receivable program and demonstrate skill in their use by entering data and generating appropriate paper products from the data.
5. Define the importance of an accounts receivable program for a child care center business.

Introduction

The primary objective of an Accounts Receivable microcomputer program is to prepare accurate and timely monthly statements to customers. The child care administrator can generate the information required to control the amount of credit extended and the collection of money owed in order to maintain a proper cash flow for the business.

It is important to note that almost all of the accounting software programs developed for small business users are designed to consider that the business "product" is a tangible one. This is not the case in child care. The "product" produced for sale to the customer in a child care center is quality child care and early childhood education. Nevertheless, most Accounts Receivable software packages can be effectively used by businesses such as a child care center when the actual "product" is a human service. It may be necessary to include certain account names, such as " shipping and handling" even though the balance will always be $00.00 in order for the program to operate correctly. Such items are few and will not present any great inconvenience once the accounting system is set up.

Most accounts receivable systems are "invoice oriented." What the system provides for the child care administrator is a bill or end of the month statement for the customer, the parent or parents of the children for whom the service is provided.

The Small Business Systems Group Accounts Receivable program will serve as the model for the examples provided in this text. The instructor will provide the student with the necessary handouts to understand and operate the actual Accounts Receivable program being used.

In the SBSG Accounts Receivable program, invoices can be entered before they are ready for billing, when they are ready for billing, after billing, or even after they are paid. Invoice information includes:

1. Type of A/R transaction--invoice, credit, or debit memo
2. Customer P.O number
3. Description of P.O.
4. Billing date
5. General Ledger account number
6. Invoice amount
7. Shipping and transportation charges
8. Tax charges
9. Payment and payment progress information

The SBSG A/R program can print a variety of reports. These reports include a summary or detailed listing of invoices not yet billed, open items (unpaid invoices), closed items (paid invoices), and aging for all, one, or a range of customers. Customer statements can also be printed. it is possible to purchase special computer statements with the letterhead of your child care center. This will be true for most of the better microcomputer accounting software packages.

In the SBSG accounting package, the Accounts Receivable program is fully linked to the General Ledger program. The A/R program will post to applicable accounts, including the income accounts specified by the user.

The SBSG Accounts Receivable Menu

The A/R menu program loads and executes all other system programs. All system programs return to this main menu when the selected operation is completed. Printed below is the Main Menu for the SBSG A/R program.

```
Accounts Receivable Program Selection Menu

Choose Program by Number

*

_

     1) Transaction Entry

     2) Transaction Print

     3) Transaction F/M

     4) Update

     5) Ledger

     6) Statements

     7) Customer F/M

     8) Tax Code F/M

     9) General Information F/M

    10) File Recovery

    11) End
```

When an available option 1 through 11 has been selected, then the menu program begins to load that program. Many of the programs may be quite lengthy. It is necessary to be patient and NOT tap any of the microcomputer keys in an effort to expedite this loading process. Many microcomputers have "type ahead" features; thus, and keystrokes made in a vain effort to speed up the microcomputer will be entered when the program is operational or fully loaded. When the program is fully loaded, a sub-menu will appear from which selections can be made in the entering of data into the program.

General Information F/M. (Remember that "F/M" stands for file management.) This general information includes the same fifteen fields as were previously noted in the General Ledger program. The same information should be entered into the General Information file; however, it is important to change the "Today's Date" entry at item 11 so that the appropriate date will be entered for transactions completed on that date.

Tax Code F/M. Nine fields are provided for the user to enter a description, tax rate, and Income G/L number. Since this is an accounts receivable program, there will usually be no taxes to record except for a $00.00 for the G/L category which receives the income from customers. If, however, the child care administrator or business owner decides to publish and sell through the child care center budget a handbook for parents on places to take young children in the city, then a sales tax rate would have to be entered under this menu item.

Customer F/M. This is a system set up step. Here the user would enter the names of all "customers;" that is, the parents who purchase quality child care from the center. The sub-menu items to be included are:

Customer No.	From 1 to file maximum
1 Name	21 characters available
2 Addr	21 characters available
3 Addr	
4 Addr	
5 Last activity (date)	Numeric with no slashes
6 Billed last year	Dollar value to over 9 million

7 Billed this year — Dollar value to over 9 million

(You should live so long as to bill 9 million dollars!)

8 Phone number — 10 digits

This program allows one to add, change, or delete customer information. It will print a numeric or alpha sort customer list, an activity list, and will move totals at year-end. The figures on the following two pages present examples of a List of Customers and a Customer Activity Report. Both lists are presented numerically rather than alphabetically, but an alpha sort, or alphabetical list could have been generated using this A/R program.

When the Customer F/M program is activated, the sub-menu will be as displayed below:

```
A/R Customer F/M

Enter Operation Code (0=Exit  1=Add 2=Change 3=Print 4=Yr End)

*

-

Customer No.

1) Name

2) Addr

3)

4)

5) Last Activity

6) Billed Last Year

7) Billed This Year

8) Phone Number
```

LONGHORN CHILD CARE CENTER
List Of Customers

Date 01/31/
Page 1

de	Name	Address		
1	ANDERSON FAMILY	7919 LAKEWOOD DRIVE	SAN ANTONIO, TEX.	78220
2	BANNER FAMILY	1786 WEST MARIPOSA	SAN ANTONIO, TEX.	78201
3	CLAYWORTH FAMILY	1402 APACHE	SAN ANTONIO, TEX.	78207
4	DE HOYOS FAMILY	3502 BRUNI	SAN ANTONIO, TEX.	78224
5	GARCIA FAMILY	2398 NACOGDOCHES	SAN ANTONIO, TEX.	78209
6	HILL FAMILY	5628 ELLISON DRIVE	SAN ANTONIO, TEX.	78245
7	MARTINEZ FAMILY	2325 MARKET STREET	SAN ANTONIO, TEX.	78225
8	MARTIN FAMILY	3602 DEVINE STREET	SAN ANTONIO, TEX.	78210
9	NEAL FAMILY	1975 ELSIE AVENUE	SAN ANTONIO, TEX.	78204
10	PEREZ FAMILY	3618 JONQUILL LANE	SAN ANTONIO, TEX.	78233
11	RODRIGUEZ FAMILY	4917 HUMBLE STREET	SAN ANTONIO, TEX.	78225
12	SALAZAR FAMILY	3602 IDLEWOOD DRIVE	SAN ANTONIO, TEX.	78242
13	TYSON FAMILY	2178 MAGNOLIA STREET	SAN ANTONIO, TEX.	78201
14	WANG FAMILY	4820 CULEBRA ROAD	SAN ANTONIO, TEX.	78238
15	ZIMMERMAN FAMILY	1298 KYLE AVENUE	SAN ANTONIO, TEX.	78224

FIGURE 4

LONGHORN CHILD CARE CENTER
Customer Activity Report

Date 01/31
Page 1

ode	Name	Last Activity	Current Year	Last Year
1	ANDERSON FAMILY	1/31/84	376.00	0.00
2	BANNER FAMILY	1/31/84	652.00	0.00
3	CLAYWORTH FAMILY	1/31/84	369.00	0.00
4	DE HOYOS FAMILY	1/31/84	268.50	0.00
5	GARCIA FAMILY	1/31/84	310.40	0.00
6	HILL FAMILY	1/31/84	321.00	0.00
7	MARTINEZ FAMILY	1/31/84	284.00	0.00
8	MARTIN FAMILY	1/31/84	369.60	0.00
9	NEAL FAMILY	1/15/84	85.20	0.00
10	PEREZ FAMILY	1/15/84	92.40	0.00
11	RODRIGUEZ FAMILY	1/15/84	87.90	0.00
12	SALAZAR FAMILY	1/15/84	75.00	0.00
13	TYSON FAMILY	1/15/84	78.50	0.00
14	WANG FAMILY	1/15/84	84.00	0.00
15	ZIMMERMAN FAMILY	1/31/84	176.70	0.00

FIGURE 5

Transaction Entry. This program is used to process all transactions--invoices, credit memos and debit memos. Printed below is the sub-menu for the Transactions Entry program:

Customer Number	Select one from the Customer F/M
Type (of transaction)	Prompts will appear on the screen for invoice, billing, payment, etc.
Cust. Order No.	PO number up to 6 characters
Bill Date	Enter valid date
Tax Code	One through nine
Invoice Amount	0 to over 9 million dollars
Shipping/Handling	0 to over 9 million dollars
Payment	+/- over 9 million dollars
Progress Due Date	Hit (enter)
Field to Change	Hit 0 for none

When all transactions have been entered, one can then print out a list of those transactions by selecting Transaction Print from the main menu. Figure 6 on the following page is an example of the report that would be obtained from the Transaction Print mode.

Transaction F/M. This program allows one to make any corrections to transactions stored in the file. Thus, when invoice payments are made, this program allows one to enter the payment amount into the program. The system also performs a self-check. If any inconsistencies are found, then the bulletin "Date or Amount Field Missing or Negative Balance" appears as a flashing message on the screen.

Stu-VI-32a

```
                         LONGHORN CHILD CARE CENTER                  Date 09/15/84
                            A/R Transactions                     Page  1

                                     Inv Amt     Ship     Taxes    Inv Pay  Prog Date Prog Bill  Prog Pay


   0  New Transactions                  0.00     0.00     0.00      0.00                  0.00      0.00
   0  Inv Billing Transactions          0.00     0.00     0.00      0.00                  0.00      0.00
   0  Inv Payment Transactions          0.00     0.00     0.00      0.00                  0.00      0.00
   0  Prog Payment Transactions         0.00     0.00     0.00      0.00                  0.00      0.00
   0  Delete Transactions               0.00     0.00     0.00      0.00                  0.00      0.00
   0  Modify Transactions               0.00     0.00     0.00      0.00                  0.00      0.00

            Totals                      0.00     0.00     0.00      0.00                  0.00      0.00


Start Record #    1
End Record #      0
Available Recs   299
```

Update. This program updates the invoice, customer, and G/L external posting file, if the two systems are coordinated. One should always check transactions thoroughly before choosing to update. This would be done by comparing the A/R Transactions report with original data.

Although transactions are not lost from day to day, it is best to update immediately after an extensive data entry session. Thus, customer files will carry up-to-date totals and the G/L information enters the G/L external posting. Even more important, running the Update program means that all current invoices are available for statement production, and new transactions are checked for duplication against the invoices on file. Figure 7 provides a sample of a portion on an Update Report.

When completed, the Update option erases the transaction file. How often one might need to update will depend on the volume of transactions, the need to generate statements, and the need to update the General Ledger.

The G/L update is automatic for systems that are coordinated; however, one should not proceed to statement printing until all update reports are carefully studied and deemed correct.

The A/R Ledger. This program is the report phase producing detailed, summary or customer range reports of open items, aging analysis, closed items, and unbilled invoices in the system. The program is designed to delete closed items from the list when selected.

The figures on the following pages provide samples of the A/R Open Items and Aging Analysis Reports produce by the SBSG Accounts Receivable Program.

```
                          LONGHORN CHILD CARE CENTER              Date 09/15/84
                                 A/R Update                 Page  1

Rec   Cust  Inv #     Cash  Acct Rcvb  Sales Inc  Defer Inc  Shipping    Taxes   Inv Amt  Tax Type op

  1     1    17      55.00     25.00     80.00      0.00       0.00      0.00     80.00   0    7    1
  G/L #31000.0
  2     2    18       0.00     86.00     86.00      0.00       0.00      0.00     86.00   0    7    1
  G/L #31000.0
```

```
                    LONGHORN CHILD CARE CENTER                         Date 09/15/84
                         A/R Open Items                            Page  1

Inv # T Cust Order #          Desc  Bill Date   Inv Amt        Ship       Taxes       Total     Inv Pay     Prog Bill     Prog Pay  Prog

Cust:   1    ANDERSON FAMILY          Sales YTD       376.00   Last Year        0.00
  Total   Bal      216.00       1 Invoices      216.00        0.00       0.00    216.00       0.00          0.00         0.00
---------------------------------------------------------------------------------------------------------------------------------
Cust:   2    BANNER FAMILY            Sales YTD       652.00   Last Year        0.00
  Total   Bal      480.00       1 Invoices      480.00        0.00       0.00    480.00       0.00          0.00         0.00
---------------------------------------------------------------------------------------------------------------------------------
Cust:   3    CLAYWORTH FAMILY         Sales YTD       369.00   Last Year        0.00
  Total   Bal      290.00       1 Invoices      290.00        0.00       0.00    290.00       0.00          0.00         0.00
---------------------------------------------------------------------------------------------------------------------------------
Cust:   4    DE HOYOS FAMILY          Sales YTD       268.50   Last Year        0.00
  Total   Bal      185.00       1 Invoices      185.00        0.00       0.00    185.00       0.00          0.00         0.00
---------------------------------------------------------------------------------------------------------------------------------
Cust:   5    GARCIA FAMILY            Sales YTD       310.40   Last Year        0.00
  Total   Bal      215.00       1 Invoices      215.00        0.00       0.00    215.00       0.00          0.00         0.00
---------------------------------------------------------------------------------------------------------------------------------
Cust:   6    HILL FAMILY              Sales YTD       321.00   Last Year        0.00
  Total   Bal      249.00       1 Invoices      249.00        0.00       0.00    249.00       0.00          0.00         0.00
---------------------------------------------------------------------------------------------------------------------------------
```

```
                        LONGHORN CHILD CARE CENTER                      Date 09/15/84
                              A/R Open Items                    Page  1

Inv # T Cust Order #         Desc  Bill Date   Inv Amt       Ship      Taxes       Total     Inv Pay    Prog Bill    Prog Pay  Prog

Cust:   1    ANDERSON FAMILY          Sales YTD     456.00   Last Year       0.00
   16 1   TUITION                     1/31/84    216.00      0.00       0.00      216.00       0.00         0.00        0.00
         G/L #31000.0
  Total   Bal      216.00     1 Invoices         216.00      0.00       0.00      216.00       0.00         0.00        0.00
---------------------------------------------------------------------------------------------------------------------------------
Cust:   2    BANNER FAMILY            Sales YTD     738.00   Last Year       0.00
   17 1   TUITION                     1/31/84    480.00      0.00       0.00      480.00       0.00         0.00        0.00
         G/L #31000.0
  Total   Bal      480.00     1 Invoices         480.00      0.00       0.00      480.00       0.00         0.00        0.00
---------------------------------------------------------------------------------------------------------------------------------
Cust:   3    CLAYWORTH FAMILY         Sales YTD     369.00   Last Year       0.00
   18 1   TUITION                     1/31/84    290.00      0.00       0.00      290.00       0.00         0.00        0.00
         G/L #31000.0
  Total   Bal      290.00     1 Invoices         290.00      0.00       0.00      290.00       0.00         0.00        0.00
---------------------------------------------------------------------------------------------------------------------------------
Cust:   4    DE HOYOS FAMILY          Sales YTD     268.50   Last Year       0.00
   19 1   TUITION                     1/31/84    185.00      0.00       0.00      185.00       0.00         0.00        0.00
         G/L #31000.0
  Total   Bal      185.00     1 Invoices         185.00      0.00       0.00      185.00       0.00         0.00        0.00
---------------------------------------------------------------------------------------------------------------------------------
Cust:   5    GARCIA FAMILY            Sales YTD     310.40   Last Year       0.00
   20 1   TUITION                     1/31/84    215.00      0.00       0.00      215.00       0.00         0.00        0.00
         G/L #31000.0
  Total   Bal      215.00     1 Invoices         215.00      0.00       0.00      215.00       0.00         0.00        0.00
---------------------------------------------------------------------------------------------------------------------------------
Cust:   6    HILL FAMILY              Sales YTD     321.00   Last Year       0.00
   21 1   TUITION                     1/31/84    249.00      0.00       0.00      249.00       0.00         0.00        0.00
         G/L #31000.0
  Total   Bal      249.00     1 Invoices         249.00      0.00       0.00      249.00       0.00         0.00        0.00
---------------------------------------------------------------------------------------------------------------------------------
```

```
                                  LONGHORN CHILD CARE'CENTER                      Date 09/15/84
                                      A/R Closed Items                      Page  1

 Inv # T Cust Order #          Desc  Bill Date    Inv Amt        Ship       Taxes        Total     Inv Pay     Prog Bill     Prog Pay  Prog


Cust:    1     ANDERSON FAMILY
     1 1   JANTUITION                 1/15/84      80.00         0.00        0.00        80.00       80.00          0.00         0.00
         G/L #31000.0
Cust:    2     BANNER FAMILY
     2 1   JANTUITION                 1/15/84      86.00         0.00        0.00        86.00       86.00          0.00         0.00
         G/L #31000.0
Cust:    3     CLAYWORTH FAMILY
     3 1   JANTUITION                 1/15/84      79.00         0.00        0.00        79.00       79.00          0.00         0.00
         G/L #31000.0
Cust:    4     DE HOYOS FAMILY
     4 1   JANTUITION                 1/15/84      83.50         0.00        0.00        83.50       83.50          0.00         0.00
         G/L #31000.0
Cust:    5     GARCIA FAMILY
     5 1   JANTUITION                 1/15/84      95.40         0.00        0.00        95.40       95.40          0.00         0.00
         G/L #31000.0
Cust:    6     HILL FAMILY
     6 1   JANTUITION                 1/15/84      72.00         0.00        0.00        72.00       72.00          0.00         0.00
         G/L #31000.0
Cust:    7     MARTINEZ FAMILY
     7 1   JANTUITION                 1/15/84      76.00         0.00        0.00        76.00       76.00          0.00         0.00
         G/L #31000.0
Cust:    8     MARTIN FAMILY
     8 1   JANTUITION                 1/15/84      82.60         0.00        0.00        82.60       82.60          0.00         0.00
         G/L #31000.0
```

```
                          LONGHORN CHILD CARE CENTER                  Date 09/15/84
                             A/R Aging Analysis                    Page  1

 Cust #   Customer                 Phone     Total Bal    Current     30 Day     60 Day     90 Day    Prog Curr   Pr 10-Day Pro

Cust:    1    ANDERSON FAMILY            (512) 649-0316    Sales YTD    456.00   Last Year      0.00
                                               216.00      0.00       0.00       0.00     216.00          0.00          0.00
---------------------------------------------------------------------------------------------------------------------------
Cust:    2    BANNER FAMILY              (512) 230-9244    Sales YTD    738.00   Last Year      0.00
                                               480.00      0.00       0.00       0.00     480.00          0.00          0.00
---------------------------------------------------------------------------------------------------------------------------
Cust:    3    CLAYWORTH FAMILY           (512) 220-2506    Sales YTD    369.00   Last Year      0.00
                                               290.00      0.00       0.00       0.00     290.00          0.00          0.00
---------------------------------------------------------------------------------------------------------------------------
Cust:    4    DE HOYOS FAMILY            (512) 626-4394    Sales YTD    268.50   Last Year      0.00
                                               185.00      0.00       0.00       0.00     185.00          0.00          0.00
---------------------------------------------------------------------------------------------------------------------------
Cust:    5    GARCIA FAMILY              (512) 231-6030    Sales YTD    310.40   Last Year      0.00
                                               215.00      0.00       0.00       0.00     215.00          0.00          0.00
---------------------------------------------------------------------------------------------------------------------------
Cust:    6    HILL FAMILY                (512) 623-1922    Sales YTD    321.00   Last Year      0.00
                                               249.00      0.00       0.00       0.00     249.00          0.00          0.00
---------------------------------------------------------------------------------------------------------------------------
```

The A/R Statements. This program prints the billing statements by customer range in a format which is consistent with that used by many contiguous forms producers. Thus, one can purchase special statement paper with the company letterhead on it. In using this program, one need only select the range of customers for whom statements are to be produced. All Open Item Invoices are printed in numerical order with aging indicated a Current (under 30 days) or Past Due (over 30 days). Figure 11 is a copy of a statment from this program.

File Recovery. The file recovery program is included to automatically place "end of markers" on any data file which has been left open. It displays the name of each file as it is inspected and indicates whether the any files had to be restored. There is no user input needed to execute this program other than the selection process from the main menu.

End. The program provides and orderly exit from the A/R module. It is the only valid way to exit the A/R program and return to the Disk Operating System.

Page 1

09/15/84

1

ANDERSON FAMILY
7919 LAKEWOOD DRIVE
SAN ANTONIO, TEX. 78220

	Customer Order #	Inv #	Inv Tot.	Inv Bal.	
1/31/84	TUITION	16	216.00	216.00	216.00P

** Total Due —> 216.00

Learning Experience 4

The Accounts Payable Program

Purpose

The purpose of this learning exercise is to familiarize the student with the Accounts Payable portion of a complete accounting system and to assist the student to develop the skills to enter information into a general ledger coordinated system using the microcomputer.

Objectives

Following the completion of this learning exercise, the student will be able to:

1. Explain the function of the Accounts Payable program.
2. Demonstrate skill in entering data into the General Ledger from the Accounts Payable program.
3. Use the Accounts Payable program to print checks to vendors.
4. Explain the value of backup diskettes in an Accounts Payable program.

Introduction The purpose of an Accounts Payable system is to record and process invoices, credit memos, and debit memos resulting from purchases and credits acquired through the day-to-day dealings with various suppliers. Each supplier may be assigned a numeric code to create a vendor file record containing the vendor's name, address, telephone number, activity date and total purchase dollars for the year and the last year. In a computerized system, all this data is available for change and print with a year-end clear for total purchase fields.

An Accounts Payable system will calculate and produce checks in payment of outstanding invoices and apply credit memos. In addition, this type of accounting program will produce cash management reports which provide up-to-date financial information to guide cash disbursements. Depending on the program being utilized, several reports could be available to the user. The information in these reports would be helpful in the analysis of payments, expenses, purchases, and cash requirements.

Most Accounts Payable programs available for a microcomputer system are going to be "invoice oriented." Thus, everything revolves around the invoice. Transactions produced are recorded as invoice #, giving the description , the buyer, check register number, date, age date, amount of the invoice, any applicable discount, freight, tax and total payable. In the SBSG Accounting package, each invoice produced by the Accounts Payable program can be distributed to up to five General Ledger account numbers. Transaction print and file maintenance procedures insure accuracy.

In this Accounts Payable program, the "update" procedure writes the transactions to the invoice file. Only updated transactions are considered ready for payment. The program will produce an update report which includes a detailed listing of transactions, an error report, and a summary of the impacted G/L accounts. When this system is fully coorated, these invoices feed cash and A/P accounts automatically.

The reports produced by this Accounts Payable program include open item listings and closed item listings both in summary and detailed form, debit and credit memo listings, aging, check register report and a vendor listing and vendor activity.

There are twenty-eight separate programs which make up the Accounts Payable program. These include such items as the main menu, an open invoice sort, a check calculation program, a check writer program, a vendor alpha list, a program to correct any transactions entered into the system, a general information file, and an A/P transactions file.

Using the Accounts Payable Program The usual power-on procedures should be followed with this program. For the Radio Shack Model III and 4 microcomputer systems this would include turning on the printer and any additional disk drives, then turning on the microcomputer.

The Accounts Payable diskette should be mounted into drive 0 with the data diskette mounted in drive 1.

For the Accounts Payable program, backup diskettes should be maintained on two levels:

1. Yearly - one diskette A/P data labeled "Not for Use--Year End XX Verified Data" and maintained for file with all yearly data veri-fied.
2. Current - diskettes on an OLD/NEW rotating basis should be maintained at all key levels of input. A "key level" would be any time data is input or updated (before one turns off the computer for the day).

p diskettes will allow one to recover data for the key periods of last year/end and yesterday.

The A/P Menu appears as shown on the following page.

```
Account Payable Program Selection Menu

Choose Program by Number

**

--

 1) Transaction Entry

 2) Transaction Print

 3) Transaction F/M

 4) Update

 5) Check Calculate

 6) Check Register

 7) Check Writer

 8) Ledger

 9) Vendor F/M

10) Information F/M

11) General Information File

12) File Recovery

13) End
```

Three menu items are used in setting up the Accounts Payable system. These are:

11) General Information. This program allows the user to enter information such as the company name, address, today's date, period start and end and several items used by the payroll program such as hourly rate, payroll check number, fiscal year end, etc.

10) Aging Information F/M. With this program the user can set aging period and check register number.

9) Vendor F/M. This program allows the user to add, change, print or delete vendor records on the vendor file. Also year end clearing of activity information is available here. The user first assigns a vendor number in the range of 1 to 99999. Vendor information can then be keyed into the system including name, address, last activity, purchase last year, purchase this year, and phone number.

Available options for the Vendor F/M are to add a record, change or delete a record, print vendor information, move totals to year end, or exit to the A/P main menu. One recalls vendor information by the record number; however, if an invalid record number is entered, then the phrase "Not on File" will be flashed on the screen.

The print option allows the user to produce an activity report, a list of vendors by vendor number or a Alpha list of vendors.

When all necessary information has been keyed into the three programs mentioned above, the Accounts Payable program is ready to receive and process transactions using the Transactions Entry program. This menu option will be the most used in the A/P module. All new data is entered using this portion of the program. Once recorded, transactions remain on file until Update is run. Transactions can be changed but only by using option #3 in the Transaction F/M program. Updating transactions writes them to the invoice file. Invoices can be changes only through the modify or delete operation from this menu.

When the Transaction Entry program is fully loaded into the microcomputer, six options are provided which are: 0=Exit, 1=New Invoice, 2=Delete information, 3=Modify information, 4=Credit memo and 5=Debit memo. Items 1, 4, and 5 add new transactions while items 2 or 3 will alter invoices.

The following example will give some indication of how this Accounts Payable program works when a new transaction is to be entered into the system. Suppose that the owner of the Longhorn Child Care Center is going to attend the National Association for the Education of Young Children Conference in Anaheim, California this year. She purchases her airline ticket through the West Winds Travel Agency and has received her ticket and invoice from the agency. Now the director wishes to enter this information into the Accounts Payable program. From the main menu, the director selects option number 1 which is A/P Transaction Entry. The screen now presents her with a sub-menu from which she selects "New Invoice". This choice brings up another screen with the prompt to enter the vendor number. Figure 12 on the following page is an A/P printout of the list of vendors in numeric order. Note that the West Winds Travel Agency is Vendor 1. Having keyed in the number 1, the center director now sees displayed the following:

```
A/P Transaction Entry        New Invoice
                                  or
                             New Db Memo

Vendor   1

Invoice *****   WEST WINDS TRAVEL AGENCY
```

LONGHORN CHILD CARE CENTER Date 01/31/84
List Of Vendors Page 1

Code	Name	Address		Phone No.
1	WEST WINDS TRAVEL AGENCY	2577 JACKSON KELLER ROAD	SAN ANTONIO, TEX. 78230	(512) 340-0024
2	EXPRESS-NEWS CORPORATION	AVENUE E & 3RD STREET	SAN ANTONIO, TEX. 78228	(512) 225-7411
3	NAT'NAL BANK OF COMMERCE	P.O. DRAWER 121	SAN ANTONIO, TEX. 78291	(512) 225-2511
4	ABC PEST CONTROL	10022 IH 35 NORTH	SAN ANTONIO, TEX. 78236	(512) 656-5050
5	PRONTO CLEANING SERVICES	311 FURR DRIVE	SAN ANTONIO, TEX. 78209	(512) 734-4182
6	SAN ANTONIO CHAMBER COMM	602 EAST COMMERCE STREET	SAN ANTONIO, TEX. 78208	(512) 229-2100
7	PARENTS MAGAZINE ENT.	80 NEW BRIDGE ROAD	BERGENFIELD, N.J. 07621	(201) 842-9000
8	HEFFERNAN SCHOOL SUPPLY	2111 WEST AVENUE	SAN ANTONIO, TEX. 78223	(512) 732-1136
9	SYSCO FOOD SERVICES	5711 FARM ROAD 78	SAN ANTONIO, TEX. 78253	(512) 661-4581
10	MARTINEZ INSUR. AGENCY	1821 SW MILITARY DRIVE	SAN ANTONIO, TEX. 78289	(512) 922-5611
11	PAUL ANDERSON COMPANY	3485 FREDRICKSBURG ROAD	SAN ANTONIO, TEX. 78238	(512) 734-8111
12	CAMPOS MAINTENANCE SERV.	6936 SAN PEDRO AVENUE	SAN ANTONIO, TEX. 78246	(512) 822-6287
13	SOUTHWESTERN BELL TELEPH	P.O. BOX 90	SAN ANTONIO, TEX. 78287	(512) 229-7922
14	CITY PUBLIC SERVICE	4919 EAST HOUSTON STREET	SAN ANTONIO, TEX. 78221	(512) 225-2541
15	DIAMOND SHAMROCK	P.O. BOX 631	AMARILLO, TEX. 79173	(806) 594-6300
16	ALEX'S GARAGE	1101 CASTROVILLE ROAD	SAN ANTONIO, TEX. 78264	(512) 432-9265

Stu-VI-46a

2577 JACKSON KELLER ROAD

SAN ANTONIO, TEXAS 78230

The director must now assign an invoice number THAT HAS NOT BEEN USED. Duplicate numbers can cause real problems in this program. Having assigned an appropriate invoice number, the director will be presented with a new screen on which will appear prompts to enter a descrption on the item purchased (up to eight letters in length), the initials of the buyer, the check register number, the invoice date, the age date, the amount of the invoice, a discount if applicable, freight and tax charges. Having entered all of this information, the program will automatically calculate the total for this invoice. If the A/P program is coordinated with the General Ledger program, then another screen will appear which will allow the center director to distribute the total amount of the invoice to the appropriate G/L accounts. One account from the G/L Chart of Accounts will be used. Account number 42400.0 is the Travel Account, so the amount of the airline ticket will be entered into the general ledger under this account number.

Three other portions of the A/P program can now be initiated by the center director—the check calculate, check register, and check writer programs. Figure 13 presents a copy of the printout from the check writer program. Specially printed checks can be purchased that can be used on the microcomputer printer. Figure 5 is a sample check register report.

. The following pages present examples of some of the other reports that can be generated using the SBSG Accounts Payable program. These include a Vendor Activity Report which lists the vendors numerically,

CHECK WRITER PROGRAM OUTPUT SAMPLE

```
              Invoice #
1/04/84          4        CLEANING                    $50.00      $0.00       $50.00




1/25/84       102                                     $50.00      $0.00       $50.00
                       PRONTO CLEANING SERVICES           Page 1 OF 1



                                   January 25,1984  102         *******50.00

                                                   **Fifty Dollars And No Cents**
           PRONTO CLEANING SERVICES
           311 FURR DRIVE
           SAN ANTONIO, TEX.  78209
```

```
                LONGHORN CHILD CARE CENTER                    Date 01/31/84
                     A/P Check Register                   Page  1

        Date     Inv No.  Description    Amount  Discount   Freight      Taxes    Net Amt      Check No.

Register      102      5     PRONTO CLEANING SERVICES     Date  1/25/84                            ---------
        1/04/84       4    CLEANING        50.00                                     50.00
           1 Item                          50.00                                     50.00

Register      103      9     SYSCO FOOD SERVICES          Date  1/25/84                            ---------
        1/10/84       7    FOOD           110.00                                    110.00
           1 Item                         110.00                                    110.00

Register      104      8     HEFFERNAN SCHOOL SUPPLY      Date  1/25/84                            ---------
        1/03/84       9    SUPPLIES        56.40                          2.82       59.22
           1 Item                          56.40                          2.82       59.22

Register      105     12     CAMPOS MAINTENANCE SERV.     Date  1/25/84                            ---------
        1/10/84      11    MAINT           25.00                                     25.00
           1 Item                          25.00                                     25.00

Register      106     13     SOUTHWESTERN BELL TELEPH     Date  1/25/84                            ---------
        1/05/84      12    TELEPH          28.50                          0.48       28.98
           1 Item                          28.50                          0.48       28.98

Totals                                    269.90      0.00       0.00     3.30      273.20
```

Stu-VI-47b

indicating the date of the last activity, current and last year's activity and totals. An A/P Ledger Open Items Listing can also be generated as well as a Closed Item Listing and an Update Report.

```
                                  LONGHORN CHILD CARE CENTER                    Date 01/31/84
                                   Vendor Activity Report                      Page  1

Code           Name              Last Activity   Current Year      Last Year


    1   WEST WINDS TRAVEL AGENCY   12/31/83            0.00             0.00
    2   EXPRESS-NEWS CORPORATION   12/31/83            0.00             0.00
    3   NAT'NAL BANK OF COMMERCE   12/31/83            0.00             0.00
    4   ABC PEST CONTROL           12/31/83            0.00             0.00
    5   PRONTO CLEANING SERVICES    1/25/84            0.00             0.00
    6   SAN ANTONIO CHAMBER COMM   12/31/83            0.00             0.00
    7   PARENTS MAGAZINE ENT.      12/31/83            0.00             0.00
    8   HEFFERNAN SCHOOL SUPPLY     1/25/84            0.00             0.00
    9   SYSCO FOOD SERVICES         1/25/84            0.00             0.00
   10   MARTINEZ INSUR. AGENCY     12/31/83            0.00             0.00
   11   PAUL ANDERSON COMPANY      12/31/83            0.00             0.00
   12   CAMPOS MAINTENANCE SERV.    1/25/34            0.00             0.00
   13   SOUTHWESTERN BELL TELEPH    1/25/84            0.00             0.00
   14   CITY PUBLIC SERVICE        12/31/83            0.00             0.00
   15   DIAMOND SHAMROCK            1/25/84            0.00             0.00
   16   ALEX'S GARAGE              12/31/83            0.00             0.00

Totals                                                 0.00             0.00
```

```
                          LONGHORN CHILD CARE CENTER                    Date 01/31/84
                         A/P Ledger Closed Item Listing                   Page  1

Vendor  Inv #  Descr.   Buy Inv Date Pay Date  Ck Reg (G/L #)      Amount   Discount     Other   Net Due   10 20 30 60  >

  1        1  AIRFARE  BS   1/05/84  1/05/84    101 42400.0       45.00       0.00       5.00     50.00                  In
  1        2  AIRFARE  WS   9/01/84  9/11/84      8 42400.0      125.00      12.50-      9.85    122.35                  In
  5        4  CLEANING BS   1/04/84  1/25/84    102 44200.0       50.00       0.00       0.00     50.00                  In
  8        9  SUPPLIES BS   1/03/84  1/25/84    104               56.40       0.00       2.82     59.22                  In
    G/L    44800.0     44900.0
    Amt      46.39       12.83
  9        7  FOOD     BS   1/10/84  1/25/84    103 44500.0      110.00       0.00       0.00    110.00                  In
 12       11  MAINT    BS   1/10/84  1/25/84    105 45300.0       25.00       0.00       0.00     25.00                  In
 13       12  TELEPH   BS   1/05/84  1/25/84    106 45500.0       28.50       0.00       0.48     28.98                  In
 15       14  GAS-OIL  BS   1/10/84  1/25/84    107 45700.0       32.58       0.00       0.00     32.58                  In
```

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```
                        LONGHORN CHILD CARE CENTER                  Date 01/31/84
                       A/P Ledger Closed Item Listing                 Page  1

                                           Amount   Discount      Other   Net Due   10 20 30 60  >

               Totals           8 Invoices   472.48      12.50-    18.15    478.13

This Report Includes Invoices From  1/01/84 To 12/31/84
Open     Invoices          8
Closed   Invoices          8
Deleted  Invoices          0
Active   Invoices         16
```

```
                         LONGHORN CHILD CARE CENTER                        Date 01/31/84
                         A/P Ledger Open Item Listing                       Page  1

 Vendor  Inv #  Descr.   Buy Inv Date Pay Date  Ck Reg (G/L #)      Amount   Discount       Other     Net Due   10 20 30 60

EXPRESS-NEWS CORPORATION                (Year To Date        0.00 )  (Last Year         0.00 )
--Account Totals--------------------------------------------------    18.50        0.00        0.00       18.50 ---------------

ABC PEST CONTROL                        (Year To Date        0.00 )  (Last Year         0.00 )
--Account Totals--------------------------------------------------    35.00        0.00        0.00       35.00 ---------------

SAN ANTONIO CHAMBER COMM                (Year To Date        0.00 )  (Last Year         0.00 )
--Account Totals--------------------------------------------------    25.00        0.00        0.00       25.00 ---------------

PARENTS MAGAZINE ENT.                   (Year To Date        0.00 )  (Last Year         0.00 )
--Account Totals--------------------------------------------------    15.00        0.00        0.00       15.00 ---------------

MARTINEZ INSUR. AGENCY                  (Year To Date        0.00 )  (Last Year         0.00 )
--Account Totals--------------------------------------------------   200.00        0.00        0.00      200.00 ---------------

PAUL ANDERSON COMPANY                   (Year To Date        0.00 )  (Last Year         0.00 )
--Account Totals--------------------------------------------------    34.96        0.00        1.25       36.21 ---------------

CITY PUBLIC SERVICE                     (Year To Date        0.00 )  (Last Year         0.00 )
--Account Totals--------------------------------------------------    89.00        0.00        0.00       89.00 ---------------

ALEX'S GARAGE                           (Year To Date        0.00 )  (Last Year         0.00 )
--Account Totals--------------------------------------------------    12.85        0.00        0.30       13.15 ---------------
```

```
                              LONGHORN CHILD CARE CENTER                  Date: 01/31/84
                                 A/P Update Report                  Page  1



                                                      Amount   Discount    Freight      Taxes      Total   Errors
     0  Invoice Transactions                            0.00       0.00       0.00       0.00       0.00        0
     0  Delete Transactions                             0.00       0.00       0.00       0.00       0.00        0
     0  Modify Transactions                             0.00       0.00       0.00       0.00       0.00        0
     0  Credit Memo Transactions                        0.00       0.00       0.00       0.00       0.00        0
     0  Debit Memo Transactions                         0.00       0.00       0.00       0.00       0.00        0

     0  Transactions                                    0.00       0.00       0.00       0.00       0.00

        G/L Postings
11100.0 Cash                        0.00
21300.0 Accounts Payable            0.00
        All Others     +           -
                       ----------- -----------
                              0.00        0.00
```

Summary The accounting program described here is a rather complex one. The greatest advantage of such a system is its flexibility and coordination among the various programs--General Ledger, Accounts Receiveable, Accounts Payable and a Payroll program not described in the text. This particular accounting program does require the assistance of an accountant to make sure that it is properly utilized. However, remember that there are a wide variety of accounting programs available for use. The child care administrator should carefully delineate which accounting functions are to be done using the microcomputer before investing in either a microcomputer or available software. As was mentioned in the begining of this text, one should always thoroughly analyze existing software before purchasing a microcomputer. The microcomputer will only be as useful a tool as the software that is available to the user.

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